AMERICAN JOURNAL OF PHARMACY.

PUBLISHED BY AUTHORITY OF THE

PHILADELPHIA COLLEGE OF PHARMACY.

HENRY KRAEMER, Ph.D., Editor.

Publishing Committee:

HENRY N. RITTENHOUSE, SAMUEL P. SADTLER, WALLACE PROCTER, JOSEPH W. ENGLAND
RICHARD V. MATTISON, JOSEPH P. REMINGTON AND THE EDITOR

Vol. 73 FEBRUARY, 1901. No. 2

CONTENTS.

The Chemistry of Ipecacuanha. By Dr. B. H. Paul and A. J. Cownley 57
Practical Politics Applied to Pharmacy Legislation. By Professor J. H. Beal, Scio, O. 66
The Detection of Adulterations in Drugs by Means of the X-Rays. By M. I. Wilbert 78
Improvements in the Remington Pharmaceutical Stills. By J. Percy Remington, B.S. 81
Memorials to American Pharmacists. By Dr. Fr. Hoffmann, Berlin 83
A Procter Memorial. By Wilbur L. Scoville 86
Correspondence: Procter Memorial; Warburg's Tincture 88
Recent Literature Relating to Pharmacy: Seleniferous Sulphuric Acid; Volumetric Alkaloid Estimations; Estimation of Total Solids in Urine 95
Editorial—The Semi-Centennial of the American Pharmaceutical Association . 97
Reviews and Bibliographical Notices 98
Pharmaceutical Meeting 103
Philadelphia College of Pharmacy 106
Notes and News i

Price, $3 per Annum, in advance. Issued in Monthly numbers of not less than 48 pages

SINGLE NUMBERS, 25 CENTS.

Address all papers for publication, etc., to the Editor.

All communications relating to subscriptions, advertisements, etc., to the Business Manager, F. YAPLE, 145 North Tenth Street, Philadelphia, Pa.

Entered at the Post Office at Philadelphia as second-class matter.

Our Readers will find it to their advantage to carefully consult the Advertising pages when desiring to correspond with STRICTLY FIRST-CLASS PARTIES

THIRD EDITION, REVISED

A TEXT-BOOK OF CHEMISTRY

Intended for the Use of Pharmaceutical and Medical Students. By SAMUEL P. SADTLER, Ph.D., F.C.S., Professor of Chemistry in the Philadelphia College of Pharmacy; and VIRGIL COBLENTZ, Ph.D., F.C.S., Professor of Chemistry and Physics and General Director of Chemical and Pharmaceutical Laboratories in the New York College of Pharmacy. Being the *Third Revised and Enlarged Edition* of Sadtler and Trimble's Chemistry.

Vol. I.—GENERAL CHEMISTRY. Thoroughly Revised. 934 pages. Cloth, $3.50, *net;* sheep, $4.00, *net.*

Vol. II.—ANALYTICAL CHEMISTRY AND PHARMACEUTICAL ASSAYING. 350 pages. Cloth, $2.50, *net;* sheep, $3.00, *net.*

There are excellent books, both large and small, on general chemistry, and there are special text-books on medical chemistry, but a book written from beginning to end to cover the needs of pharmaceutical and medical students, and at the same time taking note of the views and discoveries of modern chemistry, both inorganic and organic, will be appreciated. This work is divided into five parts: Elementary Physics, with special attention to the application and forms of scientific apparatus used by the pharmacist; the Chemistry of the non-Metals; the Chemistry of the Metals and Metallic Salts, with special consideration of the official in the U. S. Pharmacopœia; Organic Chemistry, with special consideration of the newer synthetic remedies; and an outline of Analytical Chemistry and Pharmaceutical Assaying.

For Sale by Wholesale Druggists, Booksellers, or the Publishers

J. B. LIPPINCOTT COMPANY

PHILADELPHIA

E. FOUGERA'S MEDICINAL PREPARATIONS

NO AGENTS

Sole Proprietor and Manufacturer of Delluc's and Lancelot's Specialties.

PRICE-CURRENT MAILED ON DEMAND.

ADDRESS: 309 EIGHTH STREET, - BROOKLYN, NEW YORK

NEW BOOKS

Introduction to Chemical Preparations

A Guide in the Practical Teaching of Inorganic Chemistry. By Professor Dr. ERDMANN, of Halle. Authorized translation from the second German edition by FREDERICK L. DUNLAP, S.D., Instructor in Industrial Chemistry at the University of Michigan. xiii + 144 pages. . . . . 12mo, cloth, $1.25

Air, Water and Food, from a Sanitary Standpoint

By ELLEN H. RICHARDS, with the assistance of ALPHEUS G. WOODMAN, Instructors in Sanitary Chemistry, Massachusetts Institute of Technology. 230 pages . . . . 8vo, cloth, $2.00

The Oil-Chemists' Handbook

Having to do with Fixed Oils, Fats and Waxes, as met with in Commerce. By ERASTUS HOPKINS, A.M., B.Sc., Chemist in Charge of U. S. Laboratories, Boston, Mass. 8vo, cloth, $3.00

JOHN WILEY & SONS

43-45 EAST NINETEENTH STREET NEW YORK

THE FIFTH OF THE SERIES OF

PHARMACEUTICAL MEETINGS

OF THE

Philadelphia College of Pharmacy

FOR 1900-01

WILL BE HELD

TUESDAY, FEBRUARY 19, AT 3 P.M.

The Pharmacists of the city are cordially invited to be present.

Eliminating Risk
Adding Profit

YOU would not be likely to leave your pharmacy in charge of a man whom you did not know to be honest. Neither would you care to share a hotel room with a man unless you knew something of his character.

It is natural for you to keep close watch on your money-drawer and purse; but why shouldn't you be just as careful of the chemicals you use? A dishonest man may rob you of money only. Impure chemicals can take your reputation.

There are thousands of druggists who find more than safety in using Merck's Chemicals; they secure an actual business advantage. Mr. O. G. Seeley, of Lexington, Mass., thus aptly voices the attitude of many dispensers towards the Merck label: "I specify your goods in *every instance*. Physicians get desired results from Merck's chemicals. That is why I 'toot the horn' for them."

Do You Specify Merck's?

THERE IS NO LINE OF

POWDERED DRUGS

So Complete, so Reliable, or at Such Reasonable Prices, as

OUR EXTRA SELECT POWDERS.

FAC-SIMILE OF PACKAGE

OF OUR EXTRA SELECT POWDERS.

They are powdered from the choicest materials with the greatest care, labelled with the botanical, common, German and French names; also the medical properties and formulas for preparations in which the powders may be used. Are put up in sealed tin cans of one pound each, and

NEVER OBTAINABLE IN BULK.

ALLAIRE, WOODWARD & CO.

PEORIA, ILL.

Philadelphia College of Pharmacy

FOUNDED 1821

OFFICERS OF THE COLLEGE

PRESIDENT
HOWARD B. FRENCH

VICE-PRESIDENTS
WILLIAM J. JENKS
RICHARD V. MATTISON

CORRESPONDING SECRETARY
ADOLPH W. MILLER

RECORDING SECRETARY
C. A. WEIDEMANN

TREASURER
JAMES T. SHINN

BOARD OF TRUSTEES

MAHLON N. KLINE
H. N. RITTENHOUSE
WILLIAM E. KREWSON
SAMUEL P. SADTLER
WILLIAM L. CLIFFE
JOSEPH L. LEMBERGER
EDWIN M. BORING
RICHARD M. SHOEMAKER
F. W. E. STEDEM
JOSEPH P. REMINGTON
T. MORRIS PEROT
C. CARROLL MEYER
HARRY L. STILES
JOSEPH W. ENGLAND
GEORGE M. BERINGER
WALLACE PROCTER
EDWARD T. DOBBINS
GUSTAVUS PILE

REGISTRAR
W. NELSON STEM

LIBRARIAN
THOMAS S. WIEGAND

FACULTY

PROF. JOSEPH P. REMINGTON
Dean of the Faculty
PROF. SAMUEL P. SADTLER
PROF. CLEMENT B. LOWE
PROF. HENRY KRAEMER
PROF. FRANK X. MOERK
J. LOUIS D. MORISON
FREEMAN P. STROUP
W. S. WEAKLEY
CHAS. H LAWALL
ERNEST F. COOK
WILLARD C. ANDREWS

ESTABLISHED 1822.

ROSENGARTEN & SONS,

Manufacturing Chemists,

PHILADELPHIA.

Sulphate of Quinine,
Muriate of Quinine,
Citrate of Iron and Quinine,
Sulphate of Cinchonine,
Sulphate of Cinchonidine,
Sulphate of Quinidine,
Bromide of Ammonium,
Bromide of Potassium,
Nitrate of Silver,
Iodide of Potassium,
Peroxide of Hydrogen, U.S.P.

Sulphate of Morphine,
Acetate of Morphine,
Muriate of Morphine,
Nitrate of Ammonia,
Hypophosphites,
Sub-Nitrate of Bismuth,
Subgallate of Bismuth,
Sweet Spirits of Nitre
C. P. Acids,
Tannin, Ether,
Resublimed Iodine,

And a general ASSORTMENT OF CHEMICALS.

Bronze Medal	World's Fair,		New York.
Silver	"	Franklin Institute,	Philadelphia.
Gold	"	Maryland Institute,	Baltimore.
Bronze	"	American Institute,	New York.
Silver	"	Indiana State Fair,	Indianapolis.
Bronze	"	Centennial,	Philadelphia.
Bronze	"	World's Industrial & Cotton Exposition,	New Orleans.
Bronze	"	World's Columbian Exposition,	Chicago.

FOUNDED A. D. 1818.

POWERS & WEIGHTMAN,

MANUFACTURING CHEMISTS,

Philadelphia.

NEW YORK OFFICE, 56 MAIDEN LANE.

QUININE
AND ALL ITS SALTS.

MORPHINE
AND ALL ITS SALTS.

STRICTLY OF OUR OWN MANUFACTURE.

FULL LINE OF CHEMICALS FOR USE IN

MEDICINE,
PHOTOGRAPHY
AND THE ARTS.

SOLD IN **WHOLESALE QUANTITIES** ONLY.

In Ordering Chemicals from your Jobber, insist upon having POWERS & WEIGHTMAN'S.

LIQUID

RENNET.

This article coagulates Milk without previous preparation, being most convenient for making

JUNKET, OR CURDS AND WHEY

Made from Calves' Rennets by a formula that many years' experience has proved reliable, and believed to be the best and cheapest in the market. Sold by leading wholesale houses in Boston, New York, Chicago and Philadelphia, and by the manufacturer.

JAMES T. SHINN,
Apothecary,
Broad & Spruce Sts.
PHILADELPHIA.

Bottle Stoppers,

Collapsible Tubes,

Pill Machines,

Pill Compressors,

Suppository Moulds.

A. H. WIRZ,

913-915-917 Cherry Street,

PHILADELPHIA, PA.

ESKAY'S

FOOD

Nourishes from Infancy to Old Age

THAT IS OUR CLAIM

This claim is substantiated by hundreds of clinical reports from physicians. Here are two selected from a large number:

A Prominent Doctor of New York City writes November 7, 1900:

"Eskay's Food is the best substitute for mother's milk now on the market. It has met all my expectations. **I am feeding my own child upon it.**"

A Philadelphia Physician writes concerning the old lady whose picture appears above, and who is now over 98 years of age:

"Eskay's Food sustained her at 96 years of age, when passing through a critical illness, and she still uses it occasionally as her diet."

Eskay's Food is the most palatable and nourishing food on the market for Infants, Invalids and Dyspeptics.

COSTS NOTHING TO TRY IT

Free samples (enough for ten meals) upon application to

SMITH, KLINE & FRENCH CO.
PHILADELPHIA, PA.

1837. ROBERT SHOEMAKER & CO. 1901.

N. E. Corner Fourth and Race Streets,

PHILADELPHIA.

MANUFACTURERS of **Strictly Pure Powdered Drugs** and **Spices.** The best crude goods only are used, and each article, prepared in our own mills, with the most scrupulous care. Crushed, ground and finely powdered drugs to meet the requirements of the best educated, conscientious Pharmacist.

IMPORTERS of **Fine Drugs, Essential Oils, Aromatic Distilled Waters.**

NORWEGIAN COD-LIVER OIL.

OLIVE OIL, Finest quality.

CASTILE SOAP, and Italian Drugs.

ALLEN'S MEDICINAL EXTRACTS, WINES and JUICES of **Conium, Hyoscyamus,** Etc., Etc.

Sole United States Agents for JOHNSTON'S FLUID BEEF.

HUNTER'S SCOTCH OATMEAL.

OUR FLUID EXTRACTS

are made from the best and most carefully selected drugs.

OUR METHODS

are accurate, systematic and scientific. We invariably assay all drugs containing alkaloids, glucosides or other assayable principles.

OUR PRICES

are reasonable, quality of product being duly considered.

SHARP & DOHME

Southern Branch
NEW ORLEANS

Laboratories
BALTIMORE

Western Branch
CHICAGO

General Offices
NEW YORK

BAYER
PHARMACEUTICAL PRODUCTS

We are sending to the PHYSICIANS throughout the United States literature and SAMPLES of the two latest additions to the list of the BAYER PHARMACEUTICAL PRODUCTS:

EPICARIN
The non-poisonous dermal parasiticide

HEDONAL
The promoter of natural sleep

You will have call for them. Order a supply from your jobber

HEROIN HYDROCHLORIDE

is pre-eminently adapted for the manufacture of cough-elixirs, cough-balsams, cough-drops, cough-lozenges and cough medicines of any kind. Price in 1 oz. packages, $4.85 per ounce; less in larger quantities; the efficient dose being very small (1/48 to 1/24 gr.). It is the

Cheapest Specific for the Relief of Coughs
(in bronchitis, phthisis, whooping cough, etc., etc.)

Write for literature to

FARBENFABRIKEN OF ELBERFELD CO.
SELLING AGENTS
P. O. BOX 2660 40 STONE STREET, NEW YORK

LICORICE...

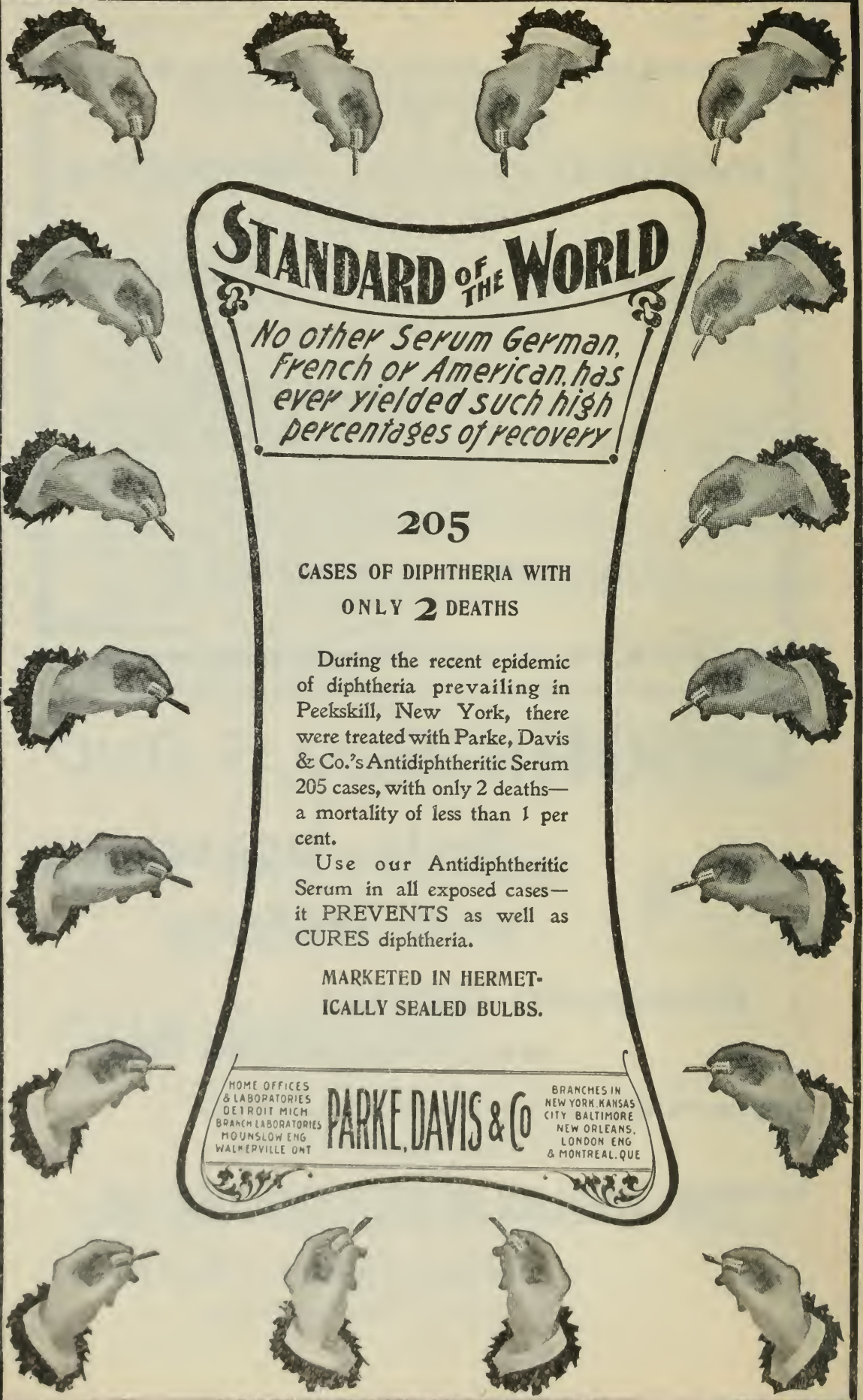
Rolls, Lozenges and Wafers

Powdered Extract and Powdered Root

Ammoniacal Glycyrrhizin in Scales.

THE MELLOR & RITTENHOUSE CO.

218 N. TWENTY-SECOND ST.
PHILADELPHIA.



STANDARD OF THE WORLD

No other Serum German, French or American, has ever yielded such high percentages of recovery

205

CASES OF DIPHTHERIA WITH ONLY 2 DEATHS

During the recent epidemic of diphtheria prevailing in Peekskill, New York, there were treated with Parke, Davis & Co.'s Antidiphtheritic Serum 205 cases, with only 2 deaths—a mortality of less than 1 per cent.

Use our Antidiphtheritic Serum in all exposed cases—it PREVENTS as well as CURES diphtheria.

MARKETED IN HERMETICALLY SEALED BULBS.

HOME OFFICES & LABORATORIES DETROIT MICH. BRANCH LABORATORIES MOUNSLOW ENG WALKERVILLE ONT

PARKE, DAVIS & Co

BRANCHES IN NEW YORK, KANSAS CITY, BALTIMORE, NEW ORLEANS, LONDON ENG & MONTREAL, QUE

THE AMERICAN
JOURNAL OF PHARMACY

FEBRUARY, 1901.

THE CHEMISTRY OF IPECACUANHA.

By Dr. B. H. Paul and A. J. Cownley.

Ipecacuanha is probably, next to opium and cinchona bark, one of the most important drugs in the official materia medica. Its chemical history, however, has been for a long time very imperfect, and although some of its medicinal effects have been ascribed to the presence of an alkaloid, there has been hitherto considerable doubt whether that was always the case. In prosecuting an inquiry as to the amount and nature of the alkaloid in ipecacuanha to which the name emetine has been given, reference was, of course, made to the observations of previous experimenters. Instead, however, of deriving much assistance from the statements of their results, we found that they led to considerable uncertainty respecting the chemical identity of the alkaloid described as emetine.

The investigation of ipecacuanha from a chemical point of view was first undertaken by Pelletier,[1] shortly after Sertürner's discovery of morphine. Pelletier showed that the medicinal properties of the drug were due to a "proximate principle or matière vomitive," to which he gave the name of Emetine, from ἐμέω to vomit. A formula for its preparation was introduced into the French Codex in 1818.[2] The product so obtained—amounting to 16 per cent. of the drug—was little more than a concentrated alcoholic extract. It had the form of transparent scales of a reddish-brown color, acid reaction and bitter taste, was very deliquescent, soluble in all propor-

[1] *Annales de Chim. et de Phys.*, IV, 172, and *Journ. de Pharm.*, 2, III, 145; IV, 322, 1817.

[2] Codex Med., 1818, 179.

tions in water or alcohol, but insoluble in ether. The aqueous solution gave a green color with ferric salts and copious flocculent precipitates on the addition of basic lead acetate or infusion of nutgalls. It was, in fact, a pharmaceutical preparation rather than a distinct chemical substance, and was essentially a compound of the basic constituents of ipecacuanha with a substance somewhat analogous to tannin.

Subsequently Pelletier succeeded, in conjunction with Magendie, in obtaining a product of distinctly basic character, which was submitted to analysis by Dumas[1] and its composition was represented as corresponding with the formula $C_{15}H_{24}NO_4$.

	Found.	Calculated.
C	64·57	64·24
H	7·77	8·39
N	4·30	4·96
O	22·95	22·61
	99·59	100·20

This base was described as a white pulverulent substance somewhat yellowish and becoming colored on exposure, but not deliquescent. It melted about 50° C., was very slightly soluble in cold water, freely soluble in alcohol and insoluble in ether.

It had a marked alkaline reaction and neutralized acids, but apparently did not form crystallizable salts, though "acid solutions sometimes showed signs of crystals." An aqueous solution was not precipitated by basic lead acetate. It was, therefore, very different from the emetine of the French Codex, and Magendie found it to be three times as effective medicinally.

Various methods of preparing emetine were subsequently suggested by Calloud, Merck, Reich and Leprat, but none of them furnished a perfectly pure and chemically individual substance. The examination of the alkaloid obtained from the official Brazilian ipecacuanha by Reich[2] is chiefly noticeable for the results of the elementary analysis leading to the formula $C_{20}H_{30}N_2O_5$:

	Found.	Calculated.
C	63·114	63·49
H	7·991	7·93
N	6·109	7·40
O	22·786	21·18
	100·	100·

[1] *Ann. de Chim. Phys.*, 2, XXIV, 180.

[2] 1863. *Archiv der Pharm.*, 2, 113, 193.

The ipecacuanha then employed for medicinal purposes in France was probably the officially recognized drug imported from Brazil, under the name of Rio ipecacuanha, the product of a plant belonging to the genus Cephaelis, and growing in the province of Mato Grosso, situated in the basin of the river Paraguay.[1] The Codex of 1758 enumerated three kinds of the official drug[2]—ipecacuanha fusca, ipecacuanha cineriia and ipecacuanha candidior—which would probably correspond with the three varieties, brown, gray and white, mentioned by Pelletier in his memoir as being the kinds most used.[3] The botanical source of these varieties is uncertain, for Pelletier's statement that the brown ipecacuanha examined by him was the product of *Psychotria emetica* was subsequently corrected by Guibourt.[4] In addition to the varieties attributed to the genus *Cephaelis*, two other kinds of ipecacuanha appear to have been official at that time, the "striated"[5] and "undulated."[6] Other kinds of ipecacuanha were imported from Para and Bahia, under names taken from the provinces of Brazil whence they were collected. Some of them no doubt were derived from plants of the genus Cephaelis and others from species of Ionidium, etc.

The gradually increasing scarcity and high price of the Brazilian drug, as well as the success attending the importation of cinchona bark from New Granada, subsequently led to the introduction of a drug from that part of South America, under the name of Carthagena ipecacuanha, obtained from a plant growing in great abundance on the banks of the Magdalena River, and considered by Guibourt to be a different and botanically undetermined species of *Cephaelis*.[7] In 1869 Lefort directed attention to this drug,[8] pointing out that, although differing in appearance from Brazilian ipecacuanha, it might be equally useful medicinally, and could, in that case, be recognized officially as a valuable supplement to the Brazilian drug. But before its use in pharmacy could be adopted,

[1] See Weddell, *Ann. des Sciences Naturelles*, II, 193.

[2] Codex Med., 1758, p. 63.

[3] *Journ. de Pharm.*, III, 148.

[4] Guibourt, "Histoire abrègé des Drogues Simples." Second edition. I, 298.

[5] Described by Guibourt as *Radix Psychotriæ*. *Ibid.*, p. 301.

[6] Referred by Guibourt to a species of *Richardsonia*. *Ibid.*, p. 302.

[7] "Histoire Naturelle des Drogues Simples," III, 82, 1850.

[8] Carthagena ipecacuanha was imported into France in boxes or casks by way of Havre, while the Brazilian drug was imported in serons by way of Bordeaux.

better knowledge was requisite as to its components, and of its actual behavior to the official drug as a therapeutic agent. Lefort,[1] in order to solve that problem, and with the view of definitely settling the question whether the ipecacuanha of New Granada could be substituted for the official drug, made a comparative examination of the two kinds by determining the amount of alkaloid contained in them.

Lefort had recourse to the method suggested by the observations of Pelletier and Dumas that the alkaloid of ipecacuanha formed with tannin a compound characterized by its very sparing solubility in water. The powdered drug was extracted by strong and weak alcohol successively; the alcoholic liquor evaporated to a syrup and the residue mixed with a large quantity of water. Tannin in slight excess was then added to the filtered liquid and the precipitate so produced well washed, dried and weighed. In that way Lefort arrived at the conclusion that the ipecacuanha of New Granada contained rather less alkaloid than that of Brazil, the relative amounts of tannate obtained being 1·34 and 1·44 per cent. Another method adopted for comparing the two kinds of ipecacuanha as to their contents in alkaloid was based on the sparing solubility of the nitrate of the base in water. The results thus obtained were very similar, so far as the amount of alkaloid was concerned; but Lefort too readily assumed the chemical identity of the basic constituents of the two different kinds of ipecacuanha. In a subsequent memoir, published during the same year, Lefort gave the results of a more particular study of the properties and composition of the alkaloid obtained from ipecacuanha.[2] The method then adopted for its extraction consisted in treating the syrupy residue of an alcoholic extract with caustic potash and chloroform. A product was obtained from the chloroform solution consisting chiefly of a base mixed with a resinous substance. These were separated by treatment with a very dilute acid, and, by adding to the clear solution just enough ammonia, the base was precipitated almost free from the resinous substance, the last portion of which was removed by digesting the washed and dried precipitate with ether. The base thus obtained was a very light powder of a white or gray

[1] *Journ. de Pharm. et de Chimie*, 4, IX, 167.
[2] *Journ. de Pharm. et de Chimie*, 4, IX, 241.

color, according to the degree of purity, almost inodorous and of bitter taste. It melted at 70° C. and on exposure acquired a brownish color, but did not deliquesce. It was sparingly soluble in cold water—1 : 1,000—readily soluble in alcohol and in chloroform, but very slightly soluble in ether, and it was uncrystallizable. That base was readily dissolved by caustic potash or soda and the solutions rapidly absorbed oxygen from the atmosphere. It was less freely soluble in ammonia, and when mixed with lime or magnesia it became yellow on exposure to air. It was readily dissolved by most acids, neutralizing them and forming soluble uncrystallizable salts; with nitric acid it formed a very slightly soluble salt and this was considered to be the most distinctive characteristic of the base. Potassium iodide and alcoholic solution of iodine gave precipitates which were very sparingly soluble in water. Mercuric chloride and potassium mercuric iodide gave white precipitates insoluble in water and soluble in alcohol. The platinochloride was soluble in water, but only sparingly soluble in alcohol, whilst ammonium molybdate and basic lead acetate both gave precipitates. Lefort did not analyze the base so obtained; but with the aid of the analytical data given by Pelletier and Dumas he endeavored to ascertain its molecular weight from the saturating capacity and the composition of its salts by determining the amounts of combined acids in the neutral sulphate and hydrochloride. On that basis, and assuming the alkaloid to be identical with the substance analyzed by Dumas, it was inferred that its formula was $C_{30}H_{44}N_2O_8$.

	Calculated.	Found.
C	64·28	64·57
H	7·86	7·77
N	5·00	4·30
O	22·85	22·95
	99·99	99·59

The subject was next taken up by Glènard,[1] who applied the method of treatment with lime and ether for extraction of the alkaloid, obtaining it colorless and in relatively large amount, a result that was not consistent with the description of emetine then accepted. Glènard obtained the alkaloid by mixing a dry alcoholic extract of ipecacuanha with an equal quantity of water and one and

[1] "Recherches sur l'alcaloide de l'ipécacuanha," *Ann. de Chim. et de Phys.*, 5, VIII, 233.

one-half times its weight of lime, then percolating the mixture with hot ether in the proportion of 1 litre of ether to 100 grammes of the extract. That ethereal solution was then shaken with sufficient weak hydrochloric acid to form a salt and, after separating the ether, the base was precipitated from the aqueous solution by ammonia. By careful evaporation of an aqueous solution of the hydrochloride the salt was obtained in a crystalline form. That result—contrary to the experience of Lefort and others, that all the salts of emetine were uncrystallizable—enabled Glènard, by repeated crystallization, to prepare a product of greater purity than had hitherto been obtained. Analysis of the purified base gave results very different from those obtained by Dumas, as shown below:

	Glènard.		Dumas.
C	72·43	72·08	64·57
H	8·64	8·59	4·30
N	5·28	5·42	7·77
O	13·65	13·91	22·95
	100·	100·	99·59

Glènard's data leading to the formula $C_{15}H_{22}NO_2$ were further confirmed by the analysis of the crystalline hydrochloride.

	Found.	Calculated for $C_{15}H_{22}NO_2,HCl$.
C	63·00	63·26
H	8·15	8·08
N	4·75	4·92
O	11·64	11·24
Cl	12·46	12·47

From these results Glènard was led to the conclusion that the substance analyzed by Dumas, as well as that subsequently obtained by Lefort, could not have been sufficiently purified.

As a result of the question raised by Glènard as to the purity and individuality of the substance obtained by previous experimenters, a further paper was published by Lefort and Wurtz[1] in which they suggested a method of preparing emetine by mixing an aqueous solution of the alcoholic extract of ipecacuanha with a saturated solution of potassium nitrate. The washed precipitate of the nitrate which required 100 parts of water for solution was dissolved in hot

[1] "Memoire sur la Preparation et la Composition de l'Émétine," *Ann. Chim Phys.*, 5, VIII, 277.

alcohol mixed with lime and, after evaporating off the alcohol, the dry residue was extracted with ether. The base was then further purified until almost colorless and it was then assumed to be absolutely pure. Analysis corresponded with the formula $C_{28}H_{40}N_2O_5$.

	Found.			Calculated.
	1	2	3	
C	69·79	69·47	69·01	69·42
H	8·15	8·18	8·14	8·27
N	5·15	5·84	5 49	5·78
O	16·30	16·51	17·36	16·53

In further confirmation of that formula, an analysis of the nitrate showed that its composition was represented by the formula $C_{28}H_{40}N_2O_5,2NO_3H$.

Whatever may have been the chemical character of the substances subjected to analysis for the purpose of the investigations already referred to, there can be little doubt that commercial emetine was impure and sometimes contaminated with a considerable amount of resin or of the constituent of ipecacuanha which to some extent resembles tannin.

Podwyssotzki,[1] who pointed out that fact, proposed to remove the impurity by means of ferric chloride. The product thus obtained was snow white, it melted at 62°–65° C., had a strongly alkaline reaction, was readily soluble in ether and very sparingly soluble in water. By the slow evaporation of an ether solution of the base partial crystallization occurred, but none of the salts were obtained in a crystalline form. The base was sparingly soluble in cold petroleum spirit or benzine, but easily soluble when heated, separating again, on cooling, in white flocks.

Some years after, the alkaloid of ipecacuanha was again submitted to investigation by Kunz,[2] who adopted a modified form of the method of preparation suggested by Podwyssotzki. Kunz's product was amorphous and colorless, but it rapidly became yellow on exposure. It was "by no means insoluble in caustic alkalies," very sparingly soluble in cold water, cold petroleum spirit or ether, but

[1] *Pharm. Zeits. für Russland*, XIX, 1; *Pharm. Journ.*, 3, X, 642.

[2] "Beiträge zur Kenntniss des Emetine," *Archiv der Pharm.*, XXV, 461.

more freely by heating. By rapid evaporation of a concentrated ether solution of the base distinct acicular crystals were sometimes obtained. When free from moisture or adherent petroleum ether, it melted at 68°–74° C.

The retention of minute traces of solvent was also considered to have been the cause of the differences between the analytical results of previous observers, and when that was provided against, analysis gave numbers leading to the formula $C_{30}H_{40}N_2O_5$.

In none of the memoirs above referred to is there any statement as to the kind of ipecacuanha operated on, and it was probable that some of the discrepancies they present might be ascribed to differences in the drug examined. The general probability that ipecacuanha might contain more than one alkaloid was also recognized by Glènard as well as by Lefort and Wurtz, but in neither case was any definite conclusion arrived at on that point, so that the alkaloid obtainable from ipecacuanha has hitherto been always regarded as one substance, having distinct chemical individuality.

On the contrary, we find that ipecacuanha resembles cinchona bark, a product of the same natural order, containing at least three alkaloids, and probably other alkaloids in small proportions.

Of the three alkaloids which we have isolated, one is uncrystallizable, but capable of forming salts which are crystallizable, though for the most part very freely soluble. For this base we have retained the name emetine. The second alkaloid, named cephaeline, is crystallizable, less soluble in ether than emetine, but freely soluble in alcohol or chloroform; much more soluble than emetine in hot petroleum spirit, and readily soluble in solutions of caustic alkali. The third alkaloid, termed psychotrine, has been isolated in only small quantity, and exists in the drug in very small amount, relatively, to emetine and cephaeline.

The failure of most previous observers to arrive at correct conclusions in regard to the ipecacuanha alkaloids presents some features of interest as showing how largely the results of such investigation may be influenced by accidental circumstances.

Lefort's method of extraction with chloroform in the presence of caustic potash furnished a product consisting of an uncertain mixture of all the alkaloids, and, in the absence of any ascertained distinction between them, their separation by Lefort was impossible. Therefore, the formula assigned to emetine by Lefort, on the basis of

Dumas' analysis, was necessarily inaccurate. The result arrived at by Lefort and Wurtz in their subsequent investigation was also defective for the same reason, although the mixed alkaloids were then obtained in a condition of greater freedom from impurity by extracting the drug with ether in the presence of lime.

Podwyssotzki's result obtained by employing ferric chloride to remove the tannin constituent was vitiated by using petroleum spirit for extraction. The product thus obtained was consequently an indefinite mixture of cephaeline and emetine from the action of the petroleum spirit on both the alkaloids, whilst probably the greater part of the emetine was not extracted at all. Kunz also used petroleum spirit and with a similar result, as is shown by the fact that the alkaloid obtained is described as (partially ?) soluble in caustic alkalies. The formula deduced from analysis by Kunz was therefore necessarily incorrect, as the material operated upon by him must have been a mixture. The experiments made by Kunz for ascertaining the constitution of emetine were also, for the same reason, fallacious, and therefore no importance can be assigned to the conclusions that were arrived at by him. The observations of Blunt,[1] that a so-called emetine of the molecular weight 508, as assigned to it by Kunz, requires one equivalent of a dibasic acid for neutralization, do not in any way advance the chemistry of the subject, inasmuch as Glènard had already shown that pure emetine assumed to have a combining weight of 248 is monobasic; hence it naturally follows that if the base were assumed to have a combining weight twice as great it would appear to be dibasic. Blunt, like Kunz, failed to obtain emetine hydrochloride in a crystalline form, for the simple reason that both chemists were dealing with a mixture of the two bases emetine and cephaeline.

Glènard, however, was more fortunate in his investigation. That was due to the care taken in obtaining the alkaloid in the state of a crystalline neutral hydrochloride, after extraction, by treatment with lime and ether. As a consequence of adopting that method of treatment, the cephaeline was eliminated and emetine was isolated in a pure condition, as shown by the results of Glènard's analyses, which correspond very closely with our own. Indications of the existence of another alkaloid were observed by Glènard, but they were not followed up by him.

---

[1] T. P. Blunt, *Pharm. Journ.*, 3, XX, 809.

Glènard's observations have received, however, very little notice, and in most chemical books the formula assigned to emetine by Kunz has been adopted as the most satisfactory. That view, however, must now be abandoned, since the results of our investigations show that the substance to which Kunz refers could not have been a definite substance.

(*To be continued.*)

PRACTICAL POLITICS APPLIED TO PHARMACY LEGISLATION.

By J. H. Beal, Scio, O.

THE PHILADELPHIA COLLEGE OF PHARMACY THE GODMOTHER OF PHARMACY LEGISLATION IN THE UNITED STATES.

It is especially fitting that the Philadelphia College of Pharmacy should take an active part in the discussion and advocacy of pharmacy legislation, since this institution may properly be regarded as the godmother of practically all the existing pharmacy laws in the United States. Our present laws are largely built upon the American Pharmaceutical Association model of 1869, which was mainly prepared by a member of the faculty of this institution, and was discussed and approved by the College before it was presented to the Association. This model is often referred to as if it were a mere copy of the English statute of 1868, but aside from the fact that, like the English law, it sought to restrict the practice of pharmacy to registered persons, it was built upon wholly original lines, and proposed an entirely different form of machinery for carrying the law into effect.

THE AWAKENING OF PHARMACY.

It must be evident to every observer of pharmaceutical affairs that we are in the midst of an extraordinary movement that promises to place the practice of pharmacy upon an entirely different footing from that which it has hitherto occupied.

After a long lethargy, the pharmacists of the United States are apparently just awakening to the fact that collectively they are capable of exerting a tremendous force in securing for themselves a position in the social and economic scale more befitting the service they render society than they have enjoyed in the past.

Everywhere there are signs of activity among the pharmaceutical fraternity, new associations are forming, and old ones are becoming more active. Renewed interest is being taken in pressing for State and National legislation tending to relieve pharmacy from unduly burdensome taxation, and in movements tending to secure fairer and more profitable trade relations between the manufacturing and jobbing interests on the one hand and the dispensing and retail interests on the other.

THE INCREASING ACTIVITY IN PHARMACY LEGISLATION.

One of the most important features of this awakening of the pharmaceutical body politic is the gradual evolution, through the joint efforts of the courts and legislatures, of a rational system of pharmaceutical jurisprudence; one which shall protect the public interest without imposing upon the natural and constitutional rights of the pharmacist, and which shall secure to the latter the opportunity of exercising his calling with the hope of reasonable profit, without infringing upon the rights of the public.

To secure this devoutly wished-for consummation, pharmacists must be active, not passive, factors. Plato says "that the punishment which the wise suffer who refuse to take part in the government is to live under the government of worse men." The penalty imposed upon pharmacists if they fail to take a proper interest in the enactment of pharmacy legislation is that they must live under laws enacted by men much less competent than themselves to prepare such legislation.

THE OBSTACLES TO PHARMACY LEGISLATION MAINLY FROM PHARMACISTS.

While we have heard much concerning the opposition of legislators to the enactment of appropriate pharmacy laws, it is the writer's opinion, based upon actual experience in advocating measures before the General Assembly, that the prime difficulty in the way of pharmacy legislation is the active or passive opposition of pharmacists themselves.

This opposition is of three kinds:

(1) The opposition of those who, without knowing why, stupidly imagine that the law will in some way interfere with their business, or who, being conscious of their own unfitness, or that they are

conducting their business in an immoral or improper manner, are opposed to any measures which might possibly interfere with them.

(2) The opposition, or what amounts to such, of those pharmacists who insist upon extreme or radical provisions which, if inserted in the measure, would most likely secure its defeat before the assembly, or, if it should chance to be enacted, would endanger it in the courts because of its interference with constitutional provisions. The overcoming of this species of opposition, for such it is in effect, is especially difficult from the fact that it comes from those who claim to be friends of the pharmacy law and therefore entitled to especial consideration.

(3) The third obstacle is found in the great mass of druggists who are poorly informed as to the nature of the legislation which should be sought, or are indifferent to the whole subject. These, when asked, generally profess to be in favor of pharmacy legislation, but limit their efforts in this respect to criticising the measures prepared by others, and count themselves liberal supporters of a bill if they do not openly oppose it.

Thus it appears that those who advocate the reform of the pharmacy laws must first overcome the opposition of those members of their own profession who are totally opposed to such legislation, must defeat the mischievous efforts of those who are in favor of radical and impractical provisions, must be able to carry with them the dead weight of the great number who are entirely indifferent, and then must still have left sufficient energy to beat down the opposition from the extra-pharmaceutical forces which are naturally expected to array themselves against such reforms.

A PLAN OF CAMPAIGN FOR THE ENACTMENT OF A PHARMACY LAW.

It has been the writer's fortune, or misfortune, to have been engaged in advocating or opposing pharmacy legislation at every session of the legislature of his own State for the past eight or ten years. This experience has convinced him that failure to procure the enactment of desirable pharmacy laws generally results from a lack of experience on the part of the persons who are delegated to look after the interests of the measure, or from a neglect to set about the work in the thoroughgoing and systematic manner which is indispensable to the successful passage of a bill through the

legislature when any opposition is manifested. Assuming that this assemblage is more interested in practical results than in literary composition, and at the risk of being prosy, the writer will attempt to formulate a simple plan of campaign which, in his opinion, should be followed by those who attempt to procure the enactment of a pharmacy law.

LEGISLATION SHOULD BE UNDER CONTROL OF THE STATE ASSOCIATION.

Without stopping to argue the point, it is taken for granted that the State pharmaceutical association should assume the initiative, and should have full control and direction of all legislation affecting pharmacy. This organization is properly regarded as representing the best elements of the profession in the State, and as probably expressing in the measures prepared by it the consensus of opinion of the druggists of the commonwealth, and its representatives, if they proceed discreetly, will be accorded a degree of attention by legislatures and by legislative committees that individuals or local societies could not expect to receive.

AROUSING THE INTEREST OF THE STATE ASSOCIATION.

The first great effort should be to thoroughly enlist the State association in favor of the proposed measure. This can best be accomplished by calling a special session for the express purpose of considering a draft of the law, at which session all other business should be tabooed. Preferably this meeting should be held just before or just after the opening of the State legislature, in order that the measure approved by the association may be put in in time to secure a good position on the calendar.

The draft should be presented to the association by some one who has made a thorough study of its provisions, and is therefore qualified to answer the objections which will invariably be raised by those who have not studied it, and will naturally want to know why this or that provision has been inserted or omitted. Generally the association's endorsement can be obtained with very little discussion, but as the prime object of the meeting is educational, the fullest possible debate should be encouraged. The draft should be read and discussed by sections, and every person present should be invited to participate, so that every member shall go home an advocate for the bill, and prepared to meet and answer the objections which may be brought against it.

THE FORM OF LAW TO BE INTRODUCED.

If an entirely new law is to be submitted to the general assembly, it should be modelled on the lines of the draft approved by the American Pharmaceutical Association at its meeting at Richmond in 1900, and whatever changes are made in this should be inserted by a competent attorney, who has been employed to give the matter his careful attention. If this is not done, the probability is that some inconsistency will be introduced which will ruin the chances of the measure before the legislature, or render it useless if passed. Many a good measure has failed of enactment because of the presence of a single objectionable clause or phrase.

AMENDMENTS.

As amendments to a bill after it has entered upon its legislative course are almost always dangerous, and frequently fatal, it should, before its introduction, be brought as nearly as possible into the shape in which it will have the best chance of passing. Those who insist upon the insertion of radical provisions, with the argument that if the legislature does not like them they can be stricken out, should have their attention called to the fact that the amendment of a bill while in the act of going through the legislature always means delay, and more often than not it means defeat. Bills in the legislature cannot be amended with the same readiness that they can in a debating society or in a pharmaceutical association. "Referred back to committee for amendment" has been the epitaph of many a brave pharmacy bill which, if properly prepared in the first place, would have had bright prospects of enactment. All provisions likely to imperil the bill should be rigorously excluded, and if of sufficient importance may afterwards be introduced into the assembly as separate measures.

THE COMMITTEE ON LEGISLATION.

The final work of the association will be the important one of selecting the Committee on Legislation, or the committee which is to look after the interests of the bill before the legislature.

The task of this committee is one of labor and vexation, requiring rare tact and patience, eternal vigilance and unceasing industry. To such an extent does the success of the bill depend upon the personnel of the legislative committee that it would not be far from the

truth to say that its fate is settled when this committee is selected. State associations have numerous offices wherein merely ornamental members may be safely lodged, but on its legislative committee it needs its most resourceful, most energetic and most earnest men.

WORK UPON THE ABSENTEES AND NON-MEMBERS.

Immediately following the adjournment of the State meeting a circular letter should be addressed to the druggists of the State, whether members of the association or not, stating briefly what has been done and asking their co-operation in securing the passage of the bill. The principal changes proposed in the law should be explained, and care should be taken to state that the interests of those already in business will not be affected deleteriously by its enactment. The circular should be conciliatory in tone, and calculated to allay the opposition of those druggists who are always on the alert to discover evil in measures proposed by others than themselves.

SELECTING A SPONSOR FOR THE BILL.

The next important step is the selection of the proper person to introduce the bill into the general assembly. This is a matter of vital importance, since a mistake in the selection of a champion may jeopardize or even defeat the measure.

In fixing upon the proper person to introduce the bill the following considerations should be kept in mind:

He should be a man of learning and ability, popular with his associates and preferably one who has had prior legislative experience.

He should be personally interested in the bill, a believer in its merits, and willing to devote time and energy toward securing its enactment.

He should be a member of a strong delegation, *i. e.*, should be from some city or district which has a large representation in the general assembly. As a member can usually command the unanimous support of his own delegation, and as the influence of a large delegation is important, other delegations having measures to pass will be chary of opposing the pharmacy bill.

The bill should be first introduced into that branch of the general assembly which it would have the most difficulty in passing if

much opposition be manifested. This is recommended for the reason that the opposition will not at first have had time to organize their forces, and also because those who are opposed to legislative measures generally make their greatest effort when the bill is put upon its final passage. If the bill is successful in this part of its course, it will have added prestige and the advantage of being in the house of its friends when the strongest assault is made upon it.

WORK AFTER THE BILL IS INTRODUCED.

The real work of the committee on legislation begins after the bill has been introduced into the general assembly. This work is to convert a majority of the members of both houses to the belief that the bill is a clean, honest measure, that its enactment will prove a public benefit, and that it is generally desired throughout the State by those who are in the practice of pharmacy. If this impression can be made upon the minds of a majority of the assemblymen, success is assured.

It must be remembered that not one member in ten will read the bill, unless he has been specially requested to do so by some interested constituent. Most of them will rely upon the statements of those who have the bill in charge for their information as to its contents and purpose. If the measure seems to be generally popular with men in whom they have confidence, they will conclude that it is a meritorious one, and will give it their support. Otherwise they will either hold aloof from it or vote with the opposition.

Among the most efficient means of favorably influencing the members of the legislature are the following:

(1) Resolutions by local associations and the colleges. Every pharmaceutical association and every college and school of pharmacy in the State should meet and adopt resolutions in favor of the bill, and forward them to the delegation from the county or district in which the society or college is located.

(2) Personal letters from prominent pharmacists in every part of the State to the members from their respective districts, soliciting their support. Nothing is so effective with a member of the assembly as a letter, or several of them, from one or more of his constituents. It matters but little what the form of the letter is, provided it expresses the fact that its writer is in favor of the

measure and desires his representative and senator to support it. Even if the member has previously made up his mind to oppose the bill, he will oppose it less vigorously, or possibly not at all, if he receives a few letters from his constituents in its favor.

To secure those letters is really the most difficult part of the work of the committee.

The temptation is usually great to send out printed letters to the druggists throughout the State, requesting them to sign and forward the same to their members in the legislature. At the best, this plan is a waste of postage and white paper. Members of the legislature usually regard such methods as an attempt on the part of some person or committee to manufacture fictitious sentiment, and very justly consider that if their constituents do not have sufficient interest in the bill to compose a letter in its favor, they must care very little what becomes of it. The best way is for the committee on legislation to make a direct appeal to prominent pharmacists throughout the State to write to their senators and representatives. If, say, fifty such men can be induced to write to their members in the assembly, and the endorsement of the local societies and colleges has been secured, the bill, if it is a good one, is almost sure to pass.

Not only should retail pharmacists be appealed to to write such letters, but wholesalers, manufacturers, physicians, and in fact any good citizen who by virtue of his social or political position should have influence in the legislature. It is all the better if persons entirely disconnected with pharmacy can be induced to interest themselves, as this is justly regarded by the legislature as evidence of the fact that the measure is really of public interest, and not a merely selfish effort on the part of druggists to create a monopoly for themselves.

CONCILIATING THE MEDICAL PROFESSION.

If the passage of a pharmacy bill through the general assembly is to be free from hard knocks the influence of the medical profession must not be lost sight of. The members of the latter profession, by virtue of their greater activity in politics, have proportionately a much larger influence in moulding legislation than pharmacists, and there is probably not a legislature in the United States which does not contain from three or four to a dozen or more physicians. Out of courtesy to the profession, these are generally all placed on the

"Committee on Medical Colleges and Associations," to which committee all bills in any way affecting the practice of medicine, dentistry or pharmacy are usually referred. If this committee reports unanimously, or by a good majority, in favor of a pharmacy bill, it is properly regarded as a very favorable beginning, while if it reports adversely, the bill has a very small chance of ever appearing on the statute books.

This fact is argument enough for the conciliation of the medical members of the general assembly, and of their professional brethren outside, and is also a good reason why those visionary members of the pharmaceutical craft who are always anxious to insert in the pharmacy law some clause to prevent the dispensing of medicines by physicians, except in emergency, and to leave the druggist the judge of the emergency, should be promptly headed off. When a bill of this character makes its appearance in the committee room it very properly goes into the bottom drawer of the chairman's desk and stays there until the end of the session, or if it gets back from the committee room, is usually in such a mutilated condition that its framers have to look the second time to recognize it.

On the other hand, if the pharmacy bill leaves the business of the physician strictly alone, the medical committee is usually inclined to be friendly, and this friendliness can frequently be increased by promising the support of the pharmaceutical interest to any medical bills which may be pending.

THE USE OF MONEY IN THE LEGISLATURE.

According to popular repute a liberal use of money among the members of the general assembly is almost indispensable to success with any measure; but this is certainly a base and unjust slander upon a very honorable class of men. There is not a general assembly in the United States the majority of whose members are not trustworthy, patriotic citizens, earnestly desirous of enacting such measures as will be of benefit to the State. If they sometimes fail it is because they have misjudged the character of a measure and not because of corrupt principles. Doubtless there are members in every legislature who are ready to solicit and accept bribes for their votes and influence, but such men are in the minority.

In the writer's opinion, the corrupt use of money in the legislature is not only wholly unnecessary, but harmful. The men who will

accept it are generally well understood by their fellow-members, and the honesty of a bill is at once open to suspicion when such men become active in its support. They really possess very little influence beyond the partners with whom they work. No greater mistake can be made by the promoters of a bill than to secure the championship of these men. If they are willing to vote for the bill, well and good, but their active support should not be solicited, as it is more likely to injure than to benefit. If any attempt is made to extort money it should be met by the statement that the committee is without funds for this purpose. If one such demand is complied with, the recipient passes the word along to his brother pirates, and then each one will demand a share of the blood money, while if the impression is given out from the start that the committee has no money to spend, they will be spared the annoyance of having to refuse corrupt solicitations.

SUBSIDIZING THE NEWSPAPERS.

Another place where money is frequently demanded is by the newspapers. In nearly every capital city there are one or more newspapers which directly or indirectly solicit money in exchange for their support of bills before the legislature, and some of them will threaten opposition if their demands are not complied with. While this practice is little better than blackmail, it is usually justified by the journals on the ground that the writing up of a measure occasions extra expense and that it is no more than fair that the advocates of the measure should bear some of the cost. As a rule it is not advisable to pay newspapers for their support, though there may be occasions where such a course would be justified by necessity, as when some other organ has come out in opposition and by misrepresentation or misstatement of facts is liable to create a wrong impression with the public. On the whole, unless the subject is first brought into the public prints by the opposition, a newspaper discussion had better be avoided, as it may and generally does arouse antagonism without materially adding to the strength of the measure before the legislature.

THE LEGITIMATE USE OF MONEY.

While we have deprecated the use of money in the legislature or for subsidizing the press, there is, nevertheless, a legitimate place

for its use, since it is only under exceptional circumstances that a pharmacy bill can be passed without liberal expenditures for postage, circulars, attorney fees, typewriting, and the travelling and other expenses of the committee on legislation. The right sort of a committee is not liable to make any unnecessary expenditures, and should therefore be its own judge of what expenses are necessary. Its members must necessarily devote a large amount of time and effort to the work of the bill, and should not be expected to meet their own travelling and hotel bills, nor be hampered by lack of funds for correspondence and printing. After paying all of these the association will still be deeply in the debt of the committee for its sacrifice of time, patience and energy in behalf of a matter in which the whole profession is interested.

DANGER OF OVERCONFIDENCE.

A danger to be specially guarded against is overconfidence on the part of the committee. It will frequently happen that the opposition is so well concealed that it may appear as if the bill would pass by a nearly unanimous vote, but if the committee permits itself to be influenced by these appearances the chances are that it will awaken some morning and find that some sharp old campaigner has put the bill into a corner whence it cannot be extricated during the remainder of the session. The only safety lies in unremitting vigilance until the law is upon the statute books. Bills have failed, even after passing both branches of the legislature, because of a failure of the proper officers to sign the record.

RECAPITULATION.

In the foregoing the writer has endeavored to give a homely and matter-of-fact statement of his opinion as to the best method of procuring the needed reforms in pharmacy legislation, which opinion is based upon actual experience in the advocacy of measures before committees of the general assembly.

The conclusions to which we have arrived may be recapitulated as follows:

The movement for pharmacy legislation should be made by the State pharmaceutical association, since this is the organization best calculated to reach and influence the druggists in all portions of the State, and is the one whose endorsement is most effective with the legislature.

The campaign should be begun by a special meeting of the association for the purpose of thoroughly discussing a draft of the proposed law, and unifying opinion upon its sections, electing the special committee which is to look after its interests, and to provide funds for necessary expenses.

The bill should be along the lines suggested by the A.Ph.A. model, should be finally pronounced upon and put in shape by a competent attorney, and should not seek to secure special privileges to the pharmacist in opposition to the general public or to the rights of the physician.

The draft should be put in the shape in which it can reasonably be expected to pass before it is introduced into the general assembly. Those who have extreme measures to advocate should be compelled to withhold them until the principal part of the law is enacted, and then bring them in as new bills.

The special advocacy of the bill before the general assembly should be in the hands of a committee on legislation, the members of which should be specially selected because of their fitness for the work.

The bill should be introduced by a strong member of a strong delegation, because of the vote-getting influence of such delegations.

The existence of the bill and the arguments in its favor should be brought to the attention of the members of the legislature individually by the committee on legislation.

All the pharmaceutical colleges and local pharmaceutical associations should meet and adopt special resolutions in favor of the bill, which should be communicated to the legislative delegations from their respective districts.

As many as possible of the influential druggists in different parts of the State should be induced to write their senator or representative endorsing the measure.

If any demand is made for money in exchange for legislative influence the committee should reply that the measure is for the public good, and that no funds are available for such expenditures.

Newspaper discussion of the bill should not be encouraged, unless the bill is first attacked through the public prints, when a suitable reply should be made.

The committee should not permit itself to become overconfident

as to success, and should never relax its efforts until the bill has received the signatures of the officers of the last house through which it passed.

When a pharmacist produces a new formula he must expect the question, "What evidence have you that your formula will work?" and the same question may properly be asked concerning the plan proposed by the present paper. The answer is that it has had a practical trial and has been eminently successful. For years the pharmacists of Ohio tried in the usual desultory fashion to procure an amendment of their pharmacy law, meeting with worse defeat at each succeeding session of the legislature. Three years ago a new attempt was made. The program which has just been outlined was followed in detail, beginning with a special session of the State Association to consider the draft of the proposed law, and followed by constant and systematic work on the part of the committee on legislation. Not a cent of money was spent in the legislature or with the newspapers, and although the measure was more bitterly fought than any of its predecessors, it passed both branches of the General Assembly without the change of so much as a punctuation point.

From the experience gained in that and other contests, the writer is convinced that, given a good draft of a law, a good committee on legislation, and systematic work along the lines which have been indicated, a pharmacy law can be passed in any State in the Union, or at least that a failure to secure its enactment would be due to extraordinary and very unusual conditions.

THE DETECTION OF ADULTERATIONS IN DRUGS BY MEANS OF THE X-RAYS.

By M. I. Wilbert.

It is well known that different substances are more or less opaque to the X-rays. This opacity is apparently due to the difference in the atomic weight of the elements entering into the composition of the particular substance under observation. We consequently find that materials having a low atomic weight offer little or no resistance to these rays, while other articles, composed of elements of high atomic weight, are nearly, if not entirely, opaque.

If we take, for example, equal parts by weight of lithium, sodium,

calcium, iron, lead and bismuth carbonates, we will find that the first two are quite easily penetrated by these rays, the second two offer rather more resistance, while the last two are comparatively opaque. This bears out the statement made above that the transparency of a substance is closely related to its atomic weight and density.

Vegetable substances, being composed chiefly of oxygen, carbon and hydrogen, with little or no earthy materials, or elements having a high atomic weight, would of course offer little or no resistance to the X-rays, consequently we have in these rays a ready means of detecting the wilful or malicious admixture of the various substances that would ordinarily be used as adulterants, such as clay, sand or gravel.

This proposition, to use the X-rays as a means of detecting adulterations of this kind, is not by any means original. Numerous suggestions have been made from time to time, and quite a number of articles have appeared, especially in France, detailing or describing the use of these rays for detecting adulterations in different drugs and foodstuffs.

The class of drugs that are especially adapted to this examination by means of the X-rays are those that are not so well adapted for examination by means of the microscope, or whose macroscopical appearance does not give much indication of their composition, namely, such drugs as have no organized cellular structure, like the inspissated juices, gums and resins. Drugs belonging to this class usually occur in irregular masses, and very often offer considerable difficulty to the estimation of their quality.

As an illustration, we may call your attention to opium. Many and various are the substances that have been found in this drug, small stones and leaden bullets being the favorite articles used to give additional weight to this well-known drug. As another illustration we may mention asafœtida. This drug, as it occurs in this market, is always more or less adulterated with sand or clay, so much so that it is almost impossible to obtain a supply of the drug that will meet the requirements of the Pharmacopœia. An examination of some of the specimens in the College collection would indicate that this admixture of absorbent clay or sand to asafœtida has been practiced for a very long time, as all of the specimens examined were evidently adulterated in the same way. One especially,

a sample of so-called stony asafœtida, was found to consist almost entirely of solid stone, with a small quantity of gum adhering to it.

The required technique is simplicity itself. Having the necessary apparatus, all that is required is to look at the interference offered by the earthy materials as indicated on a fluorescent screen, or, if we should desire a permanent record of the examination, we simply replace the fluorescent screen with a photographic plate and give an exposure of from ten to twenty seconds. Subsequent development will show us at once whether or not any appreciable amount of foreign matter is present. By making a comparative exposure of a drug of known quality, we can estimate, roughly of course, the amount of adulteration, and at least say definitely whether or not it is better or worse than the sample, the composition of which is known. Among the drugs that have been examined for foreign matter we have found that gum-arabic, gum-senegal and manna are comparatively free from admixtures of inorganic materials. Asafœtida, as mentioned above, is constantly and grossly adulterated. Myrrh is another drug that has a more or less constant admixture of adulterating materials, not necessarily clay or sand, however, as one sample of Turkey myrrh, from the College collection, was found to be a piece of bark coated on the outside with myrrh. Of the three specimens of guaiac that were examined, one was a specimen of purified guaiac from the College collection. This seems to be free from inorganic matter. The other two specimens have a slight amount of foreign material mixed with the resin.

Several specimens of benzoin were examined; of these, one had small masses of yellow clay mixed with the drug, and another consisted largely of bark and chips of wood.

The commercial samples of aloes that were examined were all free from sand and dirt. Several old specimens, obtained from Professor Kraemer, were grossly adulterated. One specimen labelled Socotrine aloes was a flat cake and consisted largely of sand or clay that had been mixed with the melted gum. Another sample labelled caballine aloes also contained a large amount of inorganic material.

Scammony, galbanum and gamboge all seem to contain a small amount of foreign material mixed with the natural exudation of the respective plants.

In addition to their use in this connection, the X-rays would seem to offer an interesting field for application in the examination of coal, asphalt and other hydrocarbon compounds that have a more or less constant admixture of siliceous or earthy materials. In the case of these compounds they not only indicate the amount of admixture, but also give us considerable information as to the nature of the admixture and the exact location of the same.

IMPROVEMENTS IN THE REMINGTON PHARMACEUTICAL STILLS.

By J. Percy Remington, B.S.

Pharmaceutical stills have been in use for many years, some have had a short life, others have answered well the requirements of their time, and have then been superseded by those of more modern construction whose merits were at once recognized.

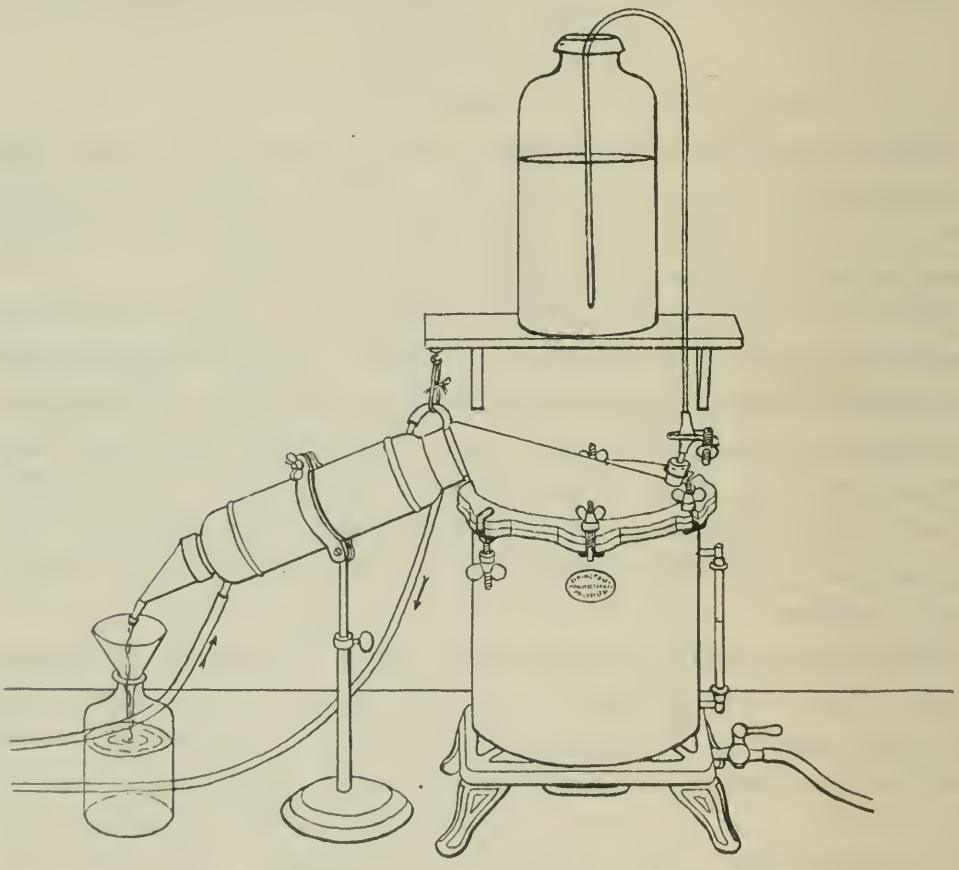
The still which is the subject of this paper was first devised by Professor Joseph P. Remington in 1872 and subsequently improved and developed as described in the American Journal of Pharmacy, 1878, page 15, and 1879, page 225. These stills have had a large use and are to be found in many parts of the world. It was with a view of introducing some further improvements that the writer took the subject up, and now ventures to present the still with the latest improvements.

The important factors in the construction of the still are that the vessel which holds the water to be distilled should present a large heating surface to the flame, that the passage from the still to the condenser should be small and direct so as to prevent any condensation at that point, and that the condenser should offer as large a cold surface to the vapor, on entering, as possible. The material of which it is composed, its strength and durability of construction, the ease with which it may be taken apart and cleaned are also important considerations.

The idea of reversing the principle of the tubular boiler and applying it to distillation as seen in the Remington condenser was a happy one. In a tubular boiler the flame circulates around the numerous tubes and evaporates the water. In this condenser the water circulates around the tubes and condenses the steam; thus the old block tin worm, which was very difficult to clean, has been

superseded by a condenser which may be thoroughly washed out by running a swab through the seven short tubes.

The fact which has often been overlooked in considering the condensation of vapors is that a tube, either straight or spiral, 10 feet long and of ½ inch inside diameter, has not the same condensing power as ten tubes, 1 foot long and ½ inch inside diameter, although both have the same extent of surface. That containing the ten tubes would present an inlet for the vapor ten times as



Improved Remington Still.

large as that containing the one tube and would thus allow the vapor to pass into and condense in the tubes that much faster. In the ten short tubes the vapor is cooled suddenly by exposure to a large cold area.

Another important point which must not be overlooked is that the two methods of distillation, by the alembic form and the retort form, are radically different in principle. In the alembic the condensation takes place in the inside surface of the head, in the retort

form all condensation should take place in the condenser and none whatever in the head, therefore the head should be small and near enough to the source of heat to get warm and thus prevent the loss due to distilled liquid dropping back into the still body. By having the outlet for the vapors at the side the condensation in the top of the Remington still is almost completely obviated.

These stills have been used for nearly twenty-eight years, and so far very little chance for improvement has been discovered. In the improved still, which is here presented, a tight joint between the still top and body is made by tightening up the thumbscrews, which are hinged to the still body. When the still is to be put away, the unscrewing of these bolts quickly effects separation.

As the condenser, when in use and full of water, is rather heavy, it was found advisable to encircle it with a clamp, which is capable of being adjusted and can be made secure at any point.

These are the only improvements that have been made in this still since it was first used. The rapidity of action of this still seems remarkable and only serves to prove the principles upon which it is built to be correct. It will distil two gallons of diluted alcohol per hour, or one gallon of water per hour, using the heat of an ordinary gas stove. It is made of tinned copper throughout, so that there is no danger of rusting, and durability is secured.

By means of the self-feeding attachment it can be run continuously, simply requiring to be looked at occasionally to see that the liquid is not getting too low.

MEMORIALS TO AMERICAN PHARMACISTS.[1]

By Dr. Fr. Hoffmann.

It has been proposed to take some appropriate action in commemoration of the semi-centennial anniversary of the American Pharmaceutical Association at the occasion of its fiftieth annual meeting to be held in Philadelphia in 1902. Among the several practical suggestions, there is, in the first place, the very proper one of having elaborated and published an historical sketch of the association, or perhaps, better, of American pharmacy and the rise and

[1] This communication, having been originally received by Albert E. Ebert, Chicago, from Dr. Hoffmann, is here presented by permission of the former.

progress of the association, including biographical notes and portraits of the principal pioneers and representatives of American pharmacy during the nineteenth century. Provided that the right man can be found to compile a worthy literary monument of this kind, such a work would be an appropriate, useful and enduring contribution to the literature of American pharmacy and a worthy credit to the association.

Precedents of this kind, although less comprehensive and specified, are the similar memoirs: "Historical Sketch of the Progress of Pharmacy in Great Britain," compiled by Jacob Bell and Theophilus Redwood, published by the Pharmaceutical Society of Great Britain at the occasion of the Fifth International Pharmaceutical Congress, held in London in 1881; "Festschrift zur Erinnerung an die 25 jährige Stiftungsfeier des Schweizerischen Apotheker Vereins am 16 und 17 August, 1893;" and "Festschrift des Deutschen Apotheker Vereins zur Feier der 25ten Jahresversammlung, 1896."

The establishment of scholarships and fellowships has also been proposed. Such endowments, however, can be of real use and benefit in a country of so vast an extent and population only if they are based upon very considerable funds, else their usefulness will be too slight and limited to far too small a number of recipients.

Another proposition seems to have been the erection of some public monument in memory of one or more of the foremost pioneers of American pharmacy. Well-founded doubts, however, may be raised whether pharmacy and its past and present position among the professions and the modern factors of intellectual culture and technical and industrial progress entitles its representatives to be ranked among the great master minds of the exact and applied sciences and arts, as well as the glorious political and military heroes whose monuments adorn the historical arenas and cities of both the old and the new world. In cases where gifted men risen from the ranks of pharmacy, such as Scheele, Liebig and others, have been honored by posterity with public monuments, this has been done in recognition of their scientific discoveries or special accomplishments only. Whether the recently erected monument of Pelletier and Caventou reflects exclusively on their scientific merits or not less on national pride also, may be a matter of doubt.

When monuments to American pharmacists are to be erected, they may more properly be placed in some museum or public hall

at the centres of education and erudition than on public squares or in parks. A proper Walhalla for the monuments of American pharmaceutical celebrities would be the hall of the pioneer school of American pharmacy, the Philadelphia College of Pharmacy, and the busts of *Procter* and *Squibb* might be among the foremost ones to be erected.

One of the most appropriate, useful and creditable memorials, however, may be the institution of a prize medal to be granted by the American Pharmaceutical Association in recognition of superior discoveries or literary accomplishments in the domains of theoretical and applied pharmaceutical sciences and arts. By bearing the impress and names of eminent and distinguished men and perpetuating their memory, this form of commemoration has been in use since antiquity. More modern memorial medals of this kind are, among others, the *Copley*, *Rumford*, *Davy*, *Hanbury*,[1] *Flückiger*[2] and *Pasteur*[3] medals, while others have been made for once only at special occasions in memory of eminent scientists and instructors, as for instance the memorial medals of Trommsdorff[4] and Scheele.[5]

---

[1] The *Hanbury medal* was instituted by voluntary contributions in 1879 in memory of the distinguished British pharmacognost, Daniel Hanbury, who died in 1875. Copies of the medal in gold are granted every three years for eminent services or discoveries in the domain of pharmacognosy. The grant is made by the Presidents of the Linnean Society, the Pharmaceutical Society and the Pharmaceutical Conference of Great Britain.

[2] The *Flückiger medal* was established in 1893 in honor of the distinguished Swiss pharmacognost, Fr. A. Flückiger, at the occasion of his retirement from the professorship at the University of Strassburg. It is granted for special merits in the domains of pharmaceutical and cognate sciences and arts.

[3] The *Pasteur medal* has recently been instituted as a premium for eminent work in bacteriological research.

[4] The *Trommsdorff medal* has been coined for once only at the occasion of the fiftieth anniversary of the entrance into pharmacy of the famous pharmaceutical educator, Joh. Barthalom. Trommsdorff, in Erfurt. The medal is of bronze, showing on the front a relief bust of Trommsdorff and on the reverse a symbolic figure of Prometheus and of two youths, representing chemistry and pharmacy, with this inscription: "Pax divina coquit succos morbisque medetur."—"Tessara amicorum, 1834."

[5] The Swedish Royal Academy of Sciences had a memorial medal coined in 1790 in memory of its member Scheele; it showed a relief portrait of *Scheele* and on the reverse a symbolic representation of the discovery of oxygen, and had this inscription: "Ingenio stat sine morte decus."—"Socio prematura morte erepto Regia Academia Scientiarum Stockholmiensis."

The suggestion of establishing a *Procter-Squibb* memorial *prize medal* at the occasion of the semi-centennial anniversary of the American Pharmaceutical Association, therefore, may be worthy of consideration. Such a medal may bear on one side the relief portraits of Procter and Squibb and their names and dates of birth and death, and on the other the emblem of the association and a proper device. Both contemporaries, united in close friendship and fellowship, have been typical and eminent representatives in their special domains of application, of the prime and ideal aims and aspirations of the earlier stages of American pharmacy and the American Pharmaceutical Association. Their joint memory, therefore, may be properly linked with the fortunes and the fame of the time-honored representative association of American pharmacy.

The question may be left open whether such a prize medal may be conferred at stated intervals, or at any of the annual meetings of the association, and whether its bestowal shall be confined to Americans only.

BERLIN, December 8, 1900.

A PROCTER MEMORIAL.

BY WILBUR L. SCOVILLE.

I have been invited to offer my views as to what may best serve as a memorial to Professor Procter. It is a subject which requires much thought, for it involves the dove-tailing of two factors. A suitable memorial is, to my mind, something which will of itself recall the man whom it memorizes, and which will appeal to those whom it aims to attract. It should not only recall or stand for the man, but it should represent his character and ideals in as attractive a manner as possible, so that his endeavors may receive in

---

On the occasion of an academic anniversary in 1827 another medal was coined by the academy, showing on the front Scheele's bust and on the reverse a veiled figure of Isis, whose veil Hermes tries to disclose.

When a monument was erected at the occasion of the one hundred and fiftieth anniversary of Scheele's birth in 1892, the Swedish Apothecaries' Society had an aluminum medal made showing on one side a relief bust of the Scheele Monument, with this inscription: "Carolo Guilmo Scheele, pharmaceutae chemico grati cultores Ordo pharmaceutia Suecia." The reverse shows a relief picture of Scheele's house in Koeping and the inscription: "Domestici parietes ipsum non famam continuerunt."

it a fresh and continuous impulse along the lines which he strove to uphold.

It is difficult to present an ideal in a way which will command attention. We do not have time to indulge much in sentiments in these days, and it is only the most vigorous and compelling endeavors that succeed in stirring up a true sentiment.

We are intensely utilitarian. The David Harum style of sentiment is the popular style to-day. An apple may be rotten throughout, but so it be gilded it is sought after. And so even the sound apple must be gilded, or it is disregarded. It's the gilding that counts and is wanted. It will not do to forget that. But how to honor the ideal and still be utilitarian is the problem. It is not a worthy memorial to gild an unworthy remembrance.

Sometimes it is wise to carry a thought or a tendency to an extreme in order to defeat it. There is sure to be a reaction. If we can put a utilitarian gilding on everything, the thoughtful ones will turn their attention to what is underneath, after a time. And so a memorial which best accedes to the demand for the serviceable now may in the end prove the best stimulus toward a worthy and honorable ideal.

* * * * * * * *

One of the greatest needs in pharmacy to-day is an established and authoritative research laboratory. I do not mean one which will delve in chemical relationships, reactions and syntheses. That is foundation work, all-important and creditable, but it is being done by the university investigators, and we can afford to leave it to them. But not all men are able to build soundly on a sound foundation. Not all can see the relationships of the seemingly abstract to the practical. There is room for a large work in the purely pharmaceutical applications of chemical facts. The pharmacists who most strongly feel the need of a sounder superstructure are not in a position to know and keep up with the increase in fundamental facts. The few who are enabled to keep in touch with the more scientific progress lack a stimulus and oftentimes an opportunity to connect them with the common needs of to-day. There is a field for the bridging of the need and the foundation fact. A laboratory in which the everyday problems of pharmacy would be worked out by competent minds and hands additional to what the

Committee of Revision of the U. S. Pharmacopœia is doing would meet a want.

* * * * * * * *

It is the custom of our larger universities to honor the memory of their scientists by naming a laboratory after them. All of our leading universities thus have one or more chemical laboratories named after one who has proved his love for chemical science by either making his influence felt in that line by his own attainments, or by buying an influence with an endowment. I do not know of any pharmaceutical laboratory thus honoring or honored. A Procter laboratory seems to me as fitting and influential a memorial as anything that could be bestowed.

By this I do not mean simply a room or building equipped and stocked and with Professor Procter's name over its doors.

The real memorial would consist in the spirit and policy within the laboratory. It should have a definite policy, with provision for carrying that policy out. And all investigations should be published as contributions from the Procter Laboratory, wherein the real memorial would appear. It would be not a local but a national memorial.

Whether the investigations should be carried on by post-graduate students through scholarships or by a director and assistants is a matter of detail; but a continuation of the work and aims of Professor Procter in this way would, it seems to me, be a fitting memorial.

Boston, Mass., January 3, 1901.

CORRESPONDENCE.

PROCTER MEMORIAL.

In response to a letter from the Editor of this Journal concerning the most appropriate way of memorializing the life and work of Prof. William Procter, Jr., the following are some of the replies which have been received:

Dear Sir:—In no other way than by appropriate memorials can those who live and heir the good works of those who have gone honor their names and testify to the appreciation of their worth.

And in this direction we who live to heir the works of the pharmacists who served us loyally and well can do no greater tribute than to testify to the works of Professor Procter. No more patient,

self-sacrificing, modest name appears on our records. In a neat memorial to him we will honor ourselves and credit our calling. Let it be neatly, artistically and well done.

JOHN URI LLOYD.

DEAR SIR:—Yours of December 18th was duly received. On the subject of a memorial to Prof. Wm. Procter, Jr., I am afraid I have nothing new to add to your able editorial in the November number of the AMERICAN JOURNAL OF PHARMACY. You bring out very clearly the comparative value of the different forms which such a memorial might take.

My individual opinion would be in favor of No. 2, a scholarship or a fellowship. I should like to see the American Pharmaceutical Association take hold of the matter. The honor would be reflected upon itself. While his working field was Philadelphia, his memory is a priceless one to American pharmacy.

It is not too early to canvass the matter, for we should be ready at the next annual meeting to give it specific form.

J. M. GOOD.

DEAR SIR:—As a memorial to the life and work of Professor Procter it seems to me that the endowment of a Fellowship for graduate work in pharmacy would be of the greatest benefit to the interests for which he labored and of largest advantage to the pharmacists of the United States. If such a memorial should be placed in charge of the American Pharmaceutical Association it would be in all respects a national benefaction.

ALBERT B. PRESCOTT.

DEAR SIR:—I am in receipt of your favor of the 15th inst., referring to a memorial to Professor Procter.

I would suggest a scholarship as a suitable form of memorial. When the matter is in more definite shape, we shall be pleased to have you call upon us for a contribution.

S. W. FAIRCHILD.

DEAR SIR:—I do not know what has been talked about in reference to the memorial to Professor Procter, but in view of the probability that a scholarship or any other form which would be centered in or connected with the Philadelphia College of Pharmacy would tend to sectionalize and narrow the scope of the movement, I think a bronze monument erected in a park or square in Philadelphia might be the most practical.

For myself, I would like to have the memorial a part of the College in some way, but there are many pharmacists who think the whole country has a claim on the "Father of Pharmacy" and who would be more willing to contribute to its success as a public undertaking.

You may put me down as one who will gladly do his share in a private capacity.

HORATIO N. FRASER.

DEAR SIR:—The proposal to memorialize the life and work of William Procter, Jr., meets with my hearty approval. That this should be a feature of the fiftieth anniversary of the American Pharmaceutical Association is also most appropriate. The form of memorial is not so easy to determine.

(1) My first preference would be for a bronze statue. More than anything else I know, it memorializes *the man*. Continually and perpetually it says, "Ecce Homo!" All kinds of people see it—children, youths, men, women; pharmacists, present and prospective; laborers, artisans, small traders, merchants and professional men; the rich and the poor; the heedless and the thoughtful. To all it says: "Behold a man who elevated his calling: go you and do likewise."

(2) My next preference would be for a fellowship. This should be granted each year to a graduate for the purpose of providing him the means to prosecute or continue research in some pharmaceutical subject. I can imagine some jealousies that might interfere with the raising of the necessary funds for this project, which all pharmacists would be asked to participate in, and there might be friction at times over the bestowal of the honor. If all trouble on these grounds could be avoided, this scheme would serve to revive the memory of the man whose name it would bear in a more pointed way than the other plan.

Other methods of memorializing Professor Procter have suggested themselves to my mind, but these seem the most appropriate and feasible.

W. M. SEARBY.

DEAR SIR:—Replying to yours of December 15th, I would say, let the memorial be something permanent—as a bust, a crayon portrait, an oil painting—something that will be at once an object lesson to those who shall see it and show to them that the

American Pharmaceutical Association appreciates the good work done for pharmacy by Prof. William Procter.

S. A. D. Sheppard.

Dear Sir:—Your question pertains to a subject to which I have devoted but little thought, so that I scarcely know what my own opinion would be. In a general way I think the best means of honoring a man is to provide for a continuation of the work in which he was most interested. Two ways of doing this readily suggest themselves:

One is to provide a scholarship which shall involve research in the particular subject, and another to provide for an annual medal or money reward for meritorious work in the same line.

As between the two, I hardly know which I would prefer. The scholarship would probably be most productive in results, while the annual conferring of a medal would probably awaken a wider interest in the work of the person in whose name the medal was bestowed.

I am sure the services of Professor Procter merit some substantial memorial, and I trust you may be successful in your efforts in that behalf.

J. H. Beal.

Dear Sir:—In reply to your letter, I will say that in my opinion Professor Procter was the father of American pharmacy. I say American, for in many ways the practice of the art of pharmacy in this country is far in advance of Europe, while willing to admit the great success of the Germans in chemistry, and the dainty skill of the French; but this is wandering.

Professor Procter, while a modest citizen of Philadelphia, nevertheless was a true American, and a tribute to his memory should be something that will last. I know his writings will last and be quoted from for many generations to come. But in my mind there should be a bronze statue, life-size, erected if possible in the Congressional Library building in Washington City. It being a fireproof building, it might be considered a lasting tribute.

Yours truly,

Geo. W. Sloan.

Dear Sir:—Your November editorial on the Procter memorial, as well as your letter of recent date, has been carefully read and all phases of the question have been given thoughtful consideration.

A memorial in enduring bronze would be handsome, but would exert influence only in one community. A travelling fellowship would, of necessity, be of influence to individuals, for no matter how great a work would be ultimately performed by the fortunate recipients of the fellowship, the main object of the memorial—the tribute to the memory of the greatest of American pharmacists—would be obscure to public mind.

Far better would it be to conform the memorial to the ideas expressed by the A.Ph.A. Committee on U.S.P. Revision at the Baltimore meeting of 1898. Could we not erect a research laboratory for Pharmacopœial work, say, in the city of Washington, dedicated to the memory of our great pharmaceutical mentor?

An expensive undertaking, I grant you, but would it not be better to devote a large sum to a grand memorial than a smaller sum to an object of limited influence?

To establish a fellowship at the low rate of interest now prevailing, at least $15,000 would be needed. Why not double this amount and purchase and equip a building to be called the Procter Memorial Laboratory, which would be an object of as much local pride as would a bronze statue and an ever-present memorial of the great man to every pharmacist and physician in this broad land of ours? Let the running expenses be defrayed by the U.S.P. Committee on Revision, supplemented by the donation of time—say a month each year—by leading investigators of this country, many of whom I am very sure would be willing to perform such service.

Think what a glorious object-lesson in pharmaceutical progress such a memorial would be, especially if it could be operated in conjunction with the Lloyd Library. Such a combination would make America the centre of pharmaceutical thought.

H. V. Arny.

Dear Sir:—In regard to commemorating the life and work of Professor Procter I am inclined to favor the monumental form.

A monument erected to perpetuate the memory of him who has unselfishly labored for the benefit of his fellow-man, whose life has been devoted to instructing the ignorant, in aiding the weak, in recalling the erring and in raising the fallen, is an inspiration for good to all who look upon it.

The tendency, however, is to erect monuments to keep alive the memory of man's passions. War is passion, not reason. To

exalt the conqueror and to remind the vanquished is an exhibition of pride and vanity, coupled with cruelty, teaching no useful lesson, and serving no generous purpose.

Let us erect a monument to Professor Procter. To provide funds for the accomplishment of this purpose, contribution could be secured through the sale of a bronze medal fac-simile of the design of the monument on one side, a profile of the professor on the obverse.

The admirable biographical sketch of Professor Procter prepared by Professor Remington and read before the Richmond meeting of the A.Ph.A. ought to be in the hands of every pharmacist in the country. The above suggestion, if carried out, would excite more general interest and popularize the project.

J. F. Patton.

WARBURG'S TINCTURE.

To the Editor of the American Journal of Pharmacy.

Sir:—I notice in your December issue an article by Mr. F. A. Sieker on Warburg's Tincture. May I be allowed to point out that both his formula and that of the National Formulary are defective in that they do not contain, or make any mention of, one constituent, which was in the formula published by Professor Maclean on behalf of Dr. Warburg in the *Lancet*, Vol. II, 1875, p. 716, and copied into the *Pharmaceutical Journal*, November 20, 1875, p. 419, that is, "Confectio Damocratis?" There should be the same quantity of this added as of rhubarb. Democrates' Confection is an obsolete preparation, which in the London Pharmacopœia, 1746, contained forty-two ingredients, including the "bellies of scinks," etc. It is the old Mithridate, and is represented by Confectio Opii, B.P., 1885. But in leaving this out, the opium—"Opii Colati"—which, it is true, is only a small quantity, about one in 200 of the confection, has been omitted also in the American publications. I have been in the habit of adding four of the essential ingredients of this confection in making my preparation. These are, in addition to opium, black pepper, ginger and cinnamon. I append my working formula. There is also half the quantity of prepared chalk that there is of rhubarb in the original formula; this is added to the ingredients, which are to be pressed, and, I assume, strained before the addition of the quinine sulphate, else it might decompose the salt, and interfere with the

solubility of the quinine alkaloid in the resultant tincture. Still, I would add it, as there is a reason given for its presence in the formula, that it corrects "the otherwise extremely acrid taste of the tincture."

I have seen bottles of the tincture, that were prepared under the direction of the late Dr. Warburg, which were free from sediment, and must necessarily have been filtered at last. Mr. Sieker says the quantity of myrrh ordered in the National Formulary contains "about thirteen times as much myrrh as the original;" this is incorrect. The original formula, to which I have referred, did not contain "electuary of myrrh," but "myrrh elect," that is, "picked myrrh." The preparation, as used in England, I think is always prescribed with the aloes. What its merits are due to besides quinine, I cannot say, but I have known cases in which it produced a marvellous effect, far beyond that of an equivalent dose of quinine. The dose is 1 to 4 drachms, but in India it is given more heroically. There, Professor Maclean says: "The tincture is administered in the following manner: ½ ounce (half of a bottle) is given alone without dilution, after the bowels have been evacuated by any convenient purgative, all drink being withheld; in three hours the other half of the bottle is administered in the same way. Soon afterwards, particularly in hot climates, profuse, but seldom exhausting, perspiration is produced; this has a strong aromatic odor, which I have often detected about the patient and his room on the following day. With this there is a rapid decline of temperature, immediate abatement of the frontal headache—in a word, complete defervescence, and it seldom happens that a second bottle is required. If so, the dose must be repeated as above. In very adynamic cases, if the sweating threatens to prove exhausting, nourishment in the shape of beef tea, with the addition of Liebig's extract, and some wine or brandy of good quality may be required."

Yours obediently,

Dec. 17, 1900. WM. MARTINDALE, F.L.S., F.C.S.

TINCTURA ANTI-PERIODICA—WARBURG'S TINCTURE.

	Grains.
Socotrine aloes, bruised	240
Rhubarb, bruised	80
Angelica fruit, bruised	80
Elecampane root, bruised	40
Saffron	40

	Grains.
Fennel, bruised	40
Prepared chalk	40
Gentian, bruised	20
Zedoary root, bruised	20
Cubebs, bruised	20
Myrrh, elect and bruised	20
White agaric, powdered	20
Opium, in powder	2½
Black pepper, bruised	4
Cinnamon, bruised	8
Ginger, bruised	8
Proof spirit (specific gravity 0·920)	1 pint (20 ounces) or q. s.

Macerate for seven days, press and strain.

Dissolve in the product :

	Grains.
Quinine sulphate	175
Camphor	20

After three days filter and add sufficient proof spirit to make one pint.

Dose : 1 to 4 drachms. W. M.

RECENT LITERATURE RELATING TO PHARMACY.

SELENIFEROUS SULPHURIC ACID.

Most of the acid furnished the University of Nancy was found to contain selenium, which is easily detected by warming on water-bath five or six drops of the suspected acid with a trace of codeine, when green-blue color is produced if selenium is present.—Schlagdenhauffen and Page, *J. Ph. et Ch.*, 1900, 261.

H. V. Arny.

VOLUMETRIC ALKALOID ESTIMATIONS.

O'Linde has published in *Archiv der Pharmazie*, 1900, 102 to 135, an elaborate paper on the subject which is worthy of translation in full, as its bibliography is strikingly complete. The original work is chiefly devoted to the indicators in the alkalimetric estimation and he places order of delicacy in aqueous solvent as follows : Luteol, pernambuco-wood tincture, hæmatoxylin, logwood tincture, tincture of cochineal, brasilin, azolitmin, tincture of litmus, phenacetolin, phenolphtalein, rosolic acid, lacmoid, etc. He finds the delicacy is sometimes influenced by change in solvent and by other factors, the conclusions being :

(1) That no more indicator should be employed than is absolutely necessary.

(2) The quantity of liquid in which the alkaloid is dissolved should be as small as possible.

(3) The temperature of titration should not exceed that of the atmosphere.

(4) The most favorable condition of solution for titration with each of the several indicators is as follows:

Tincture of pernambuco-wood, tincture logwood, hæmatoxylin, brasilin, azolitmin, tincture litmus, phenolphtalein and rosolic acid with water alone, chloroform and ether to be particularly avoided with last two; fluorescein and gallein with water and ethereal layer containing the alkaloids; luteol in water or alcohol, chloroform and ether being avoided. Tincture of curcuma and poirroir blue have been suggested as indicators, but both are worthless. H. V. A.

ESTIMATION OF TOTAL SOLIDS IN URINE.

This estimation is difficult, for evaporation, even on water-bath, causes decomposition of urea, and erroneous results in consequence; and evaporation in vacuo is convenient only to expert chemists; hence calculations based on the density of the urine have been employed, the best known being the method of Haeser, who multiplies the two figures representing hundredths and thousandths of specific gravity by a constant coefficient 2·33, the product being grammes of solids in a litre of urine. Thus, specific gravity 1·020 would show: 20 x 2·33 equals 46·6 grammes solids to litre.

J. Amann (*Schw. Wochsch. f. Ch. und Ph.*, 1900, p. 141), on study of the subject with an artificial urine of known strength, finds that the coefficient is not constant; that the line representing relation of density is not straight, but a hyperbola. He therefore devised a table which he claims is reliable; unfortunately, however, based on amount of total solids of invariable composition, viz.: Urea, 60 per cent.; salt, 36 per cent.; extractive (sugar), 4 per cent. Were the proportion of inverted sugar greater than that above, different results might be obtained, and likewise the presence of albumen may affect result, hence extended work is highly desirable. Amann's table in abbreviated form is as follows:

Specific gravity	1·010	1·015	1·020	1·025	1·030	1·035	1·040
Total solids, grammes in litre .	20·3	30·8	41·6	55·5	70·3	83·4	95·2

Lastly he gives an equation for estimation of total solids in urine of any specific gravity, namely, total solids $= 6{\cdot}4 + 1{\cdot}02\ P + 0{\cdot}037\ P^2$; "P" representing difference between specific gravity of the urine and that of water, expressed in units. H. V. A.

EDITORIAL.

THE SEMI-CENTENNIAL OF THE A.PH.A.

There is a marked difference in the duration of the germinating and life periods of different animals and plants, and the same may be said of the projects and undertakings of men. Hardly was this nation entailed in the conflict with Spain than rich men gave munificently to provide for the exigencies of war. The nation to a man willingly contributed to the war taxes. Not always, however, do appeals to men meet with such ready responses. This applies more especially to appeals made for the establishment of memorials perpetuating the lives and names of the learned and the great. The merits of those who are truly distinguished appeal for the most part to special classes, and it generally devolves upon a few who have a particular regard and affection for them and their work to execute the tasks in hand.

Last May the Huxley memorial statue was unveiled in the Museum of Natural History, South Kensington, London. It required over four years (since November 27, 1895) for the committee to collect £3,380 for this purpose. Almost all memorials which are of real, lasting consequence require time for decision in regard to the most fitting character of the memorial, and also for the devising of ways and means for collecting funds for such purposes. Nearly two years have elapsed since Albert E. Ebert suggested to the American Pharmaceutical Association (see Proc., 1899, p. 115) that something be done by that Association to revive the memory of Professor William Procter, Jr. We believe that Mr. Ebert had put forth this suggestion quietly for a number of years to various members of the Association, and no doubt to almost all of the members it has at first seemed as though the project were a great way off and that at the proper time the right thing would be done.

At the semi-centennial of the Association something will no doubt be done by the members that will be worthy of her history and her influence in promoting the welfare of pharmacy and medicine. It will be an unusual opportunity for stimulating the growth of the Association and for extending her influence in the professions and among the people. In order to facilitate the discussion of the various aspects of this celebration at the next meeting of the Association, the Editor of this JOURNAL has sought expressions of opin-

ion from some of its leading members in regard to one phase of the celebration, viz., the proposed memorial to Professor Procter, and some of the letters received in reply will be found in another part of this JOURNAL. Of course there are many who feel a diffidence about placing themselves on record in regard to this matter. It should be said, however, in regard to all expressions of this kind, that every one should feel that there is no inconsistency in changing one's opinions after other expressions have been put forth, and no man need feel that he is bound to adhere to what he has said on this subject if he is satisfied that the project of another is more feasible and more suitable. For, as Emerson says: "If you would be a man, speak what you think to-day as hard as cannon balls, and to-morrow speak what to-morrow thinks in hard words again, though it contradict everything you said to-day." It is the principle that needs to be established first and this is what the replies of those who have contributed in the correspondence referred to accentuate. Indeed, not only is it shown that the Procter Memorial is desired, but that it can be readily accomplished, as the letters of Samuel W. Fairchild and Horatio N. Fraser indicate.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

GRESHOFF'S FISHPOISONS. Part II. Batavia: G. Kolf. 1900. Large 8vo, 253 pages.

It will be of interest to the readers of the announcement of the first part of this valuable addition to phytochemical literature (which appeared in the *Bull. of Ph.* and in *Sc. Amer.*, 1894) to know that its untiring author[1] published recently (September, 1900) Part II.

It is a still more complete summary of reports on poisonous plants than Part I was already. It gives a review of what is said in half a dozen modern languages on fishpoisons *strictiori sensa;* is completed by incorporating plants containing more or less known active principles; interspersed with the author's own good opinion and manifold experience in this field, adding some of his own analyses, to sharpen our appetite for the luxurious intellectual food he sets before us.

[1] Dr. M. Greshoff, of late attached to the Government Botanical Garden at Buitenzorg, is at present chemical director of the Kolonial Museum, Harlem, Holland.

It is somewhat after Dragendorff's "Heilpflanzen der verschiedenen Völker und Zeiten," Stuttgart, Enke, 1898, while the owners of Dr. Fred Hoffmann's list of popular names of household remedies, chiefly of the vegetable kingdom ("Pharmac. Rundschau"), will find an extension to that list in Greshoff's book.

The author is mindful of the fact that the use of fishpoisons is not confined to such races as we are pleased to call savages, and produces, to illustrate this, a Dutch newspaper article, dated October, 1898, wherein we are told that fishermen in our large rivers are making such good use of a fishpoison to ply their trade as the most lazy "black" could not improve upon. Heaps of dead fishes sometimes of 50 kilogrammes bulk (weight), accumulate on the borders, killed by little pill (used as a lure) made from bread, powdered seeds of Cocculus indicus and whiskey, of which bait the fishes are very fond.

The whole book breathes a spirit of stirring individual research such as emanated from "Die Pflanzenstoffe" of both Husemanns in its time.

I noted an omission on page 20, which I might be allowed to supply.

Baillon, "Histoire des Plantes," had stated the crushed leaves of different Viola species exhale an odor of hydrocyanic acid. Dr. Greshoff did *not* find HCN, but detected an odor of methyl salicylate (the well-known popular wintergreen-oil odor). From a special investigation on fresh plants in blossom, he concluded the absence of free salicylic acid.

Turning to "Viola tricolor," Inaugural Diss., von Henry Kraemer, aus Chicago (*our* editor!), we read that "Manderlin" worked this problem out in Dragendorff's laboratory, in the year 1881. Mandelin's process of isolating salicylic acid from Viola tricolor (the whole plant) excludes, he said, the *formation* of salicylic acid. It must be present, in the plant, free, uncombined. He found it in the roots of other Viola species, too, in weighable quantities—0·14 per cent. in the plant above the earth, 0·05 per cent. in the root. Those results have been verified by Griffith and Conrad (1884). There must be an enzyme present in the plant which splits up a certain compound, since the methyl salicylate odor is not to be mistaken, and agreed upon by all writers, excluding the wrong information from Baillon. The latest authority on

"Ferments," Reynolds Green, Cambridge, 1899, is silent on Viola and its methyl salicylate.

A few quotations may be made from Greshoff's book:

Anemone nemorosa, a violent poison when fresh; harmless when dry.

Clematis flammula, very poisonous, green; dry, a good fodder.

Clematis caripensis, "blistering leaf."

Delphinium vestitum, "leaves poisonous to goats."

Anonaceæ; very little is known and investigated about the poisonous alkaloids from this family.

Corydalis racemosa; a single leaf will kill a man.

Camellia Japonica., L., C. Sasangua, Thunb. The seeds are poisonous.

Linum usitatissimum; its glucoside yield HCN; the wash-water in flax-works is therefore poisonous to fishes.

Ruta graveolens, abortivum and anthelminticum.

Ilex aquifolium; two or three berries work as an emetic. Twenty are fatal.

Sapindus emarginatus. It seems very strange that bees, insects possessing such a wonderful instinct, should drink the nectar of these poisonous flowers and get killed in this way.

Centaurea scabiosa,

Carduus nutans,

Scabiosa succisa, all benumb bees.

Coriaria Nepalensis; leaves act as a powerful poison; seeds produce symptoms like tetanus.

Cytisine determinations. * * * C. Laburnum; seed contains 1·8 per cent. Ulex Europ.; seed contains 1 per cent. Sophora secundiflora; seed contains 3·5 per cent. Sophora tomentosa, L.; seed contains 2·1 per cent. Baptisia australis, R. Br.; seed contains 1·6 per cent.

Swainsona galegifolia, R. Br. One of the most dreaded plants by stockowners. * * * Some Swainsoneas are excellent fodder plants, while others produce (the) mysteriously fatal effects. Chemical analysis has failed to isolate a toxic principle. * * *

Pachyrizus tuberosus, Spr. The beans, when ripe, are poisonous. The tubers, too, contain a poisonous "resin (?)." This resin is an active fishpoison.

Piscidia erythrina.[1] "The Indians have a tree wherewith they take their fish for their present use, being near their habitations * * * and so they take as many as they please. This is a providence of God to those barbarous people, being a nature help for present food and sustenance."

Leucœna glauca, B. Horses (and asses) lose the hair of their manes and tails by eating the leaves. This fact is well known in the Bermuda Islands. Reviewer assayed some time ago a small quantity of the leaves, but did not detect any alkaloidal or glucosidal active principle therein. I suppose the plant acts only when "fresh."

Eucalyptus microtheca, used by the aborigines of Australia to poison fish, by throwing fresh-cut boughs in the river. The Cucurbitas from the Canaries and East Indian Islands are often used "in full sea" to intoxicate fish. "*The whole yellow pumpkin* is poisonous." This reads queer to Americans, on whose table a pumpkin pie is considered a delicacy. The pumpkin mentioned here is an Abobora amarella. The Dutch terminology of *Kalbas* and *pumpkin* is somewhat mixed; but that is a fault of the language, not of the author. * * * The seeds of most Cucurbitaceæ contain some active principle, a tænifugum, an emeticum, an abortivum.

With the addition that Greshoff gives a few interesting items on some remarkable cryptogames (Cumarine in Polypodium scandess, Lindsæa cultrata and others; an abortivum in Lycopodium Seleg.), I leave further judgment of the book to the readers.

LEIDZ, HOLLAND; STATE UNIVERSITY, J. B. NAGELVOORT.
November 9, 1900.

AIR, WATER AND FOOD FROM A SANITARY STANDPOINT. By Ellen H. Richards and Alpheus G. Woodman, Instructors in Sanitary Chemistry, Massachusetts Institute of Technology. 8vo. Cloth. iv–226 pp. $2. New York: John Wiley & Sons.

The three essentials for human life are air, water and food. The consideration of these essentials in their relation to the needs of daily existence is the province of sanitary science, engineering and municipal finance. The authors in the work before us have taken up the consideration of the subject from the standpoint of the sani-

[1] Compare "Proximate Analysis of the Bark of Piscidia, Er.," by H. Berberich. AMER. JOUR. OF PHARM., September, 1898, p. 425.

tary chemist, and it will do much to equip the chemist for his work and to call his attention to the importance of the work not only from an analytical standpoint, but further in directing the attention of the students as well as the public before whom he may lecture to chemical subjects. Every one ought to be familiar with the facts of the sanitary science of air, water and food.

"The human body, in order to carry on all its functions to the best advantage, must be placed under the best conditions and must be supplied with *clean air*, *safe water*, and *good food*, and must be able to appropriate them to its use. The day is not far distant when a city will be held as responsible for the purity of the air in its schoolhouses, the cleanliness of the water in its reservoirs, and the reliability of the food sold in its markets as it now is for the condition of its streets and bridges. Nor will the years be many before educational institutions will be held as responsible for the condition of the bodies as of the minds of the pupils."

The book treats of the following: *Air:* composition, impurities, relation to human life; the problems of ventilation; methods of examination of air; *Water:* source, properties, solvent power, as a carrier; the problem of safe water and interpretation of analyses; methods of examination of water; *Food:* in relation to human life, definition, sources, classes, dietaries; adulterations and sophistications of food materials, methods of food analysis. The work is to be regarded as an important addition to sanitary chemistry.

Veterinary Counter Practice. A Treatise on the Diseases of Animals and the Most Suitable Remedies for Them. Written expressly for chemists and druggists by qualified and experienced members of the Royal College of Veterinary Surgeons. Third edition. Published at the offices of the *Chemist and Druggist*, 42 Cannon Street, London, E. C. 1900.

It is not generally recognized among pharmacists that veterinary counter practice is a legitimate part of the pharmacists' calling, particularly when situated in the country, as he is more likely from his knowledge and skill with compounding of medicines to be able to supply the requirements of the farmer, stockholder and pet owner. The suggestions in "Veterinary Counter Practice" are not intended as a "substitute for the clinical experience absolutely necessary to the equipment of a competent veterinary practitioner, but in hundreds of cases it will enable the pharmacist to understand cases detailed t

him at his counter, and to supply the most suitable remedy." The arrangement of the contents is as follows: Medical and Surgical Treatment of Domestic Animals; Veterinary Medicines; Diseases of the Horse; Lameness in Horses; Dentition of the Horse; Diseases of Cattle; Diseases of Sheep; Diseases of Pigs; Diseases of Dogs; Treatment of Eye Diseases; Wounds, Sores, etc., in Animals; Diseases of Poultry; Posological Table; Miscellaneous Veterinary Formulæ; Veterinary Surgeons Act; the title "Veterinary Chemist;" the Contagious Diseases (Animals) Acts; Sale of Horses; Veterinary Curriculum; Methylated Veterinary Preparations; Administration of Poison to Horses. A number of illustrations on lameness in horses and dentition of the horse serve to elucidate the text. The book is a valuable one, in not only the information it contains, but in throwing out numerous hints as to how the pharmacist may increase his trade in this particular field.

The Student's Medical Dictionary. Including all the words and phrases generally used in medicine, with their proper pronunciations and definitions, based on recent medical literature. By George M. Gould. Eleventh edition. Enlarged with many illustrations. Philadelphia: P. Blakiston's Son & Co. 1900. $2.50.

The new edition has been enlarged by over 100 pages, contains a large number of new illustrations and a new table of eponymic terms. It is particularly adapted to the wants of students, and contains correct and succinct definitions of all the more common words that are used in the different books, lectures, etc.

The book is of peculiar value to the pharmacist as well as physician and dentist, as the price is reasonable, the size is convenient and the definitions are right to the point.

PHARMACEUTICAL MEETING.

The fourth of the series of pharmaceutical meetings of the Philadelphia College of Pharmacy for 1900–1901 was held on Tuesday, January 15, 1901. Mahlon N. Kline, well known in pharmaceutical circles, presided. The meeting was a notable one, in that a number of papers of exceptional value were presented. Prof. J. H. Beal, of Scio, O., widely known for his important contributions on the subject of pharmaceutical jurisprudence, presented a paper on "A Lesson in Practical Politics Applied to Pharmacy Legislation" (see

page 66). The value of this paper is evidenced by the fact, as stated by the speaker, that the methods outlined by him have been practically applied in securing pharmaceutical legislation in Ohio. The paper is one which is deserving the reading of every pharmacist of the United States, as it shows the value of individual effort, in a most forcible manner, in securing beneficial legislation. In commenting upon the paper, Mr. Kline said that he heartily endorsed what had been said by Professor Beal and that he was convinced that no one could gather together more common sense concerning the manner of securing pharmaceutical legislation than was done by the speaker. Mr. Cliffe likewise said that he had never heard a more succinct statement of the methods to be employed for securing desirable legislation than was brought out in the paper by Professor Beal. He said that he had known the motion to refer a bill to a committee for amendment to be useful in defeating a bad bill, as well as being an epitaph for a good bill, as brought out by Professor Beal. Mr. Cliffe referred to the proposed pharmacy law for the State of Pennsylvania and said that it differed from the old one in certain respects, in that it (*a*) required all stores to have a license which must be renewed annually; (*b*) the registration of apprentices at a nominal fee, which would serve to establish their identity; (*c*) registration in two grades; (*d*) an improvement in the clause relating to poisons. Mr. Cliffe further suggested to those present that they speak of this meeting to proprietors and others in their respective neighborhoods, urging them to support the proposed law. Professor Remington commended very highly Professor Beal's labors for securing desirable legislation and said that he was glad that the paper was so unanimously endorsed by the meeting. A special vote of thanks was given Professor Beal for his valuable paper and for the efforts he had made in coming so far to present it at this meeting.

An exceptionally valuable paper and one having special interest at this time, on account of the revision of the U.S.P., on "The Chemistry of Ipecacuanha," by Dr. B. H. Paul and A. J. Cownley, London, was presented on behalf of the authors by Professor Kraemer (see page 57).

Mr. M. I. Wilbert gave very interesting papers on "The Use of X-Rays in Detecting the Adulterations in Drugs" and "The Production of Nitric Acid from Atmospheric Nitrogen," both of which he demonstrated by means of electrical apparatus supplied by Messrs.

Queen & Co. The paper on "The Use of X-Rays in Detecting the Adulterations in Drugs" appears in full in this issue. The others, on "The Production of Nitric Acid from Atmospheric Nitrogen" and "Commercial Asafœtida," will be printed in the March issue of this JOURNAL. Those commenting upon these papers were Professors Remington and Lowe and the Chairman.

J. Percy Remington presented a paper on "Improvements in the Remington Pharmaceutical Still," which was illustrated by means of the apparatus, exhibited both in sections and in operation. Mr. Wallace Procter said that he had used this still for a good many years and that the improvements in clamps for securing the head of the still and the attachment for holding the condenser were desirable features. Mr. E. M. Boring said that he had used the Prentis still for the making of aromatic waters and found the apparatus to fulfil all his wants, and said that it had in its favor the fact that no clamps whatsoever were used. He said that he thought the adaptation of the boiler idea with condenser, as in the Remington still, was a good one.

Among the pieces of apparatus exhibited was "The Druggists' Label Gummer," which is intended to do away with the old method of paste and brush and appears to be particularly adapted where large numbers of labels are used.

Mr. W. L. Cliffe presented to the College two mortars, one which he obtained while on a recent trip to Mexico, which was made of stone of volcanic origin and used in the grinding up of Chile or red pepper, which is largely used with corn meal in that country. The other was a carved wooden mortar cut out of a solid block of wood, and was obtained from Arabia, it being used there in the grinding of coffee.

Mr. Wallace Procter exhibited a pair of saddle-bags which had been used during the Mexican war by Mr. Mordicai, a former Philadelphian, an engineer in the U. S. Army. The bags still contained a number of medicinal preparations, as essence of peppermint, ammonia water, morphine sulphate, calomel, ipecac, jalap, laudanum, compound cathartic pills and iodide of potassium pills.

Among the papers to be presented at the next meeting on February 19th are the following:

(1) "Remarks on a New Cold Cream and Other Ointments." By William C. Alpers, Sc.D., New York City.

(2) "Why do Syrups Spoil?" By Alfred I. Cohn, New York City.
(3) "Assay of Coca." By William R. Lamar, New York City.
(4) "Gum Mastic." By Henry C. C. Maisch, Ph.D.
(5) "The Ebulliscope." By William R. Lamar, New York City.

H. K.

PHILADELPHIA COLLEGE OF PHARMACY.

The quarterly meeting of the members of the Philadelphia College of Pharmacy was held December 31st, the President, Howard B. French, in the chair. Nineteen members were present. The minutes of the semi-annual meeting, held September 24th, were read and approved as read. The minutes of the Board of Trustees for the months of October, November and December were read by the Registrar, W. Nelson Stem, and approved as read.

The consideration of the proposed addition to the By-Laws submitted at the September meeting (and published in the AMERICAN JOURNAL OF PHARMACY for November, 1900, page 562) was then taken up and, after slight amendments, was adopted. The Revised Code of Ethics was then taken up for action (a printed copy having previously been mailed to the members), and after consideration by section was adopted with slight alterations in the phraseology of section (4) four.

Mr. Beringer presented a printed copy of the newly revised By-Laws, and as this completed the work of the Committee, asked that they be discharged. The report was accepted and the Committee discharged with the thanks of the members.

The President reported that he had asked the solicitors of the College for an opinion as to the advisability of copyrighting the name and seal of the College, who reported against the advisability of it, as under existing laws it would not prevent any one from using the name of the College for business purposes.

Announcement was made of the death of our fellow-member, David Preston, which occurred on the 22d of October, at Fallston, Md. Mr. Preston was elected a member in 1874. No further business, the meeting, on motion, adjourned.

C. A. WEIDEMANN, M.D.,
Secretary.

NOTES AND NEWS.

PENNSYLVANIA STATE PHARMACEUTICAL EXAMINING BOARD.—In the twelfth annual report it is stated that the entire number of registered pharmacists passed in nearly two years (ending January 31, 1900) was only 336, or about 20 per cent. of the total number examined.

THE ETIQUETTE OF ACADEMIC COSTUME.—Academic Costume should be used on all formal occasions where the members of an educational institution meet in a collective capacity, and as the commencement is the chief ceremony of the academic year, the use at commencement time may be taken as a guide for other occasions.

The cap is treated in a manner similar to the use of the military helmet or chapeau, and when academic bodies are in procession should be always on the head, the tassel hanging over the left eye. The cap is on the head during all the more important parts of the ceremony, but is usually removed when the officers and candidates take their seats, with the exception of the presiding officer, who will wear the cap during the entire exercises, with the exception of the time that he may be making a lengthy address or during the delivery of addresses to the general audience. When the candidates are upon their feet, standing up to receive any particular address in connection with the conferring of degrees, the cap, of course, should be on, as the whole body is then in full dress. When the presiding officer confers degrees, whether he be standing or sitting, he should, of course, have on the cap, and the candidates presenting themselves raise the cap from the head in salute to the presiding officer, he acknowledging it by a similar salute or with more dignity, perhaps, without salute.

The gown should rest easily on the shoulders of the wearer, and all motions of the hands in adjusting the gown should be avoided. A gown should be balanced in the making and secured to the person so that it will hang naturally and gracefully, and the hitching up of the gown around the shoulders, which so often is seen in the pulpit and on the platform, should be avoided, as it seems to indicate the unfamiliarity of the wearer with his apparel and indicates that the clothes do not properly fit the man. Gown, cap and hood should be worn with perfect freedom and unconsciousness.

The hood, which expresses the possession by the wearer of a degree either already received or certified as due to the candidate, is always worn on full-dress occasions. It becomes more symbolic when placed over the shoulders of the candidates, in the course of the ceremony, by an attendant connected with the official life of the institution, since it shows that the hood has the same significance as the diploma, which is conferred at the same time; however, many institutions find it more convenient to have its candidates come up for their degrees with the hood already on their shoulders, the candidate being invested with it after due certification by the authorities that he is to be raised to the dignity of the degree indicated.

The symbolism of the hood is most interesting, showing by its cut whether it is pertaining to the bachelor, master or doctor degree; by the velvet trimming, as to whether the degree is of arts, science, philosophy, theology, laws, medicine, pharmacy or other department of learning to which degrees pertain,

while by the color or colors displayed in the hood lining, one is reminded that the degree has been conferred by the institution that uses the colors shown as its official colors.—*Cotrell and Leonard, Albany, N. Y.*

The Nineteenth Century.—The progress made during the past century is a subject in which every one is interested, and the New York *Evening Post* and the New York *Sun* have taken up the subject in a way that is very creditable. The *Post*, in its issue of January 12th, published some thirty-eight or thirty-nine articles on as many different subjects and by as many different authors, the subjects ranging from astronomy and physics to painting, architecture, literature, finance and economics. The *Sun* is publishing a series of Sunday articles, thirteen in all. Those of scientific interest are as follows: "Evolution," by Alfred Russel Wallace (December 23d); "Chemistry," by Prof. W. Ramsay (December 30th); "Archæology," by Professor Flinders-Petrie (January 6th); "Astronomy," by Sir Norman Lockyer (January 13th); "Philosophy," by Dr. Edward Caird (January 20th); "Medicine," by Prof. William Osler (January 27th); "Surgery," by Prof. W. W. Keen (February 3d); "Electricity," by Prof. Elihu Thomson (February 10th); "Physics," by President F. C. Mendenhall (February 17th).

Magazine Science.—Referring to Nikola Tesla's article in *The Century Magazine* for June on "The Problem of Increasing Human Energy," a writer in *Marine Engineering* (vide *The Locomotive*, 1900, p. 124) says:

"This dazzling contribution to modern unscientific research reads like nothing so much as an essay on Christian Science, so profound is it in the ambiguous nothingness whereby it leads through the intricacies of incoherency unto the climax of absolute asininity. This climax is reached (for us) in the following statement, which occurs on page 198 of the June *Century*: 'Steamers and trains are still being propelled by direct application of steam power to shafts or axles. A much greater percentage of the heat energy of the fuel could be transformed into motive energy by using, in place of the adopted marine engines and locomotives, dynamos driven by specially designed high-pressure steam or gas engines, and by utilizing the electricity generated for the propulsion. A gain of from 50 to 100 per cent. in the effective energy derived from the coal could be secured in this manner.' It is no doubt beyond the comprehension of the literary gentlemen who publish *The Century Magazine* to understand that progress in marine propulsion is slow, very slow, and that there is nothing in the entire domain of scientific research that promises any hope of being able to transform a much greater percentage of the heat energy of fuel into motive energy by employing dynamos driven by specially designed high-pressure steam or gas engines. It is to be expected, however, that, as those responsible for the statements made in what has been considered one of the foremost literary magazines of the country, they should appreciate their lack of expert knowledge, and by procuring suitable editorial assistance safeguard their readers, the reputation of the magazine, and their own sense of right. Under the circumstances, we most unqualifiedly pronounce the statement here reproduced from *The Century Magazine*, regarding marine propulsion, to be a crude and ignorant 'fake.'"

Warner's Pills, Tablets, Effervescing Salts

THE MOST EXTENSIVE PILL FACTORY IN THE WORLD

FIRST PRIZE PARIS EXPOSITION

WARNER'S BROMO SODA

The most efficacious "BROMO." The "BROMO" for your fountain trade. Can you use any of our "BROMO" booklets?

WARNER'S LITHIA TABLETS

Profit Makers. Quick Sellers. The best LITHIA TABLET made. Write for booklets, "Acid Diathesis."

WARNER'S TONO SUMBUL CORDIAL

A spring tonic, a tissue builder. Attractive package. Sells well.

W. R. WARNER & CO.

PHILADELPHIA NEW YORK CHICAGO LONDON

RICHTER'S CHEMISTRIES

AUTHORIZED TRANSLATIONS

By EDGAR F. SMITH, M.A., PH.D., SC.D.,

Professor of Chemistry in the University of Pennsylvania; Member of the Chemical Society of Berlin, American Philosophical Society, etc., etc.

Professor Richter's methods of arrangement and teaching have proved their superiority by the large sale of his books throughout Europe and America, translations having been made in Russia, Holland, and Italy. The success attending the publication in this country could only have been attained for good books that have been found useful, practical, and thoroughly up to the times.

THE CHEMISTRY OF THE CARBON COMPOUNDS, or Organic Chemistry. Third American, translated from the Eighth German Edition by PROF. R. ANSCHÜTZ, University of Bonn. Thoroughly Revised, Enlarged, and in many parts Rewritten. Illustrated. Two Volumes. 12mo.

Vol. I. Aliphatic Series. 625 pages. Cloth, $3.00
Vol. II. Carbocyclic and Heterocyclic Series. 671 pages. Cloth, $3.00

From Science.

"Anschütz, in editing v. Richter's 'Organic Chemistry,' has raised it from the rank of a good descriptive manual to a place in the front rank of books on this subject. . . . **The book is written tersely and clearly.** The nomenclature in common use is retained, but that recommended by the Geneva Conference is also given."

From The Lancet, London.

"We doubt whether there is a chemist living whose opinions on organic chemistry are more respected than those of Richter. . . . It teems with facts and contains an explicit account of the theory of the science and the architecture of the complex organic molecules."

INORGANIC CHEMISTRY. Fifth American from the Tenth German Edition by PROF. H. KLINGER, University of Königsberg. Thoroughly Revised and in many parts Rewritten. With many Illustrations and Colored Plate of Spectra. 12mo. Just ready. Cloth, $1.75

From The Scientific American.

"It is markedly practical, clear, and direct in its statements, bringing out prominently the relations between proved facts and theories or hypotheses, so as to preclude as far as possible speculative inferences from the mind of a student beginning the study of chemistry.'

P. BLAKISTON'S SON & CO., Publishers, Philadelphia

The Philadelphia Commercial Museum

W. P. WILSON, Sc.D.
DIRECTOR

PHILADELPHIA, PA.

The Philadelphia Commercial Museum aids the American Manufacturer to find new markets, shows him how to invade them and gives him complete information as to commercial conditions and credits abroad.

It corresponds in any language and is in constant touch with 12,000 foreign correspondents.

No exporter can afford to do without its services.

(NATURAL SIZE, 3½'X1½', ABT.)

Berlin-Porcelain-Haldenwanger

FROM THE

PORCELAIN WORKS

W. HALDENWANGER, Charlottenburg

CAN BE OBTAINED

FROM ALL BUSINESSES WHICH DEAL

IN CHEMICAL APPARATUS

Microscopes for Pharmacists

FROM
$15.00 TO
$35.00

Write for
Catalogue BM

Queen & Co.
Inc.
1010 Chestnut
Street
Philadelphia

New York
59 Fifth
Avenue

RECENT BOOKS OF
GEBRÜDER BORNTRAEGER,
PUBLISHERS,
BERLIN, S. W. 46.

Die mikroskopische Analyse der Drogenpulver. Ein Atlas für Apotheker, Drogisten und Studirende der Pharmacie von PROFESSOR DR. L. KOCH. Erster Band: Die Rinden und Hölzer. Erste Lieferung mit 3 Tafeln. Lex.-Octav. Paper Cover, $1.00.

Die Harze und die Harzbehälter. Historisch-kritische und experimentelle, in Gemeinschaft mit zahlreichen Mitarbeitern ausgeführte Untersuchungen von PROFESSOR DR. A. TSCHIRCH, Director des pharmaceutischen Institutes der Universität Bern. Mit 6 Tafeln. Gross-Octav. Half Calf, $4.00.

Die Glykoside. Chemische Monographie der Pflanzenglykoside nebst systematischer Darstellung der künstlichen Glykoside von DR. J. J. L. VAN RIJN, Director der Reichsversuchsstation in Mastricht. 8vo. Cloth, $2.50.

ADDRESS: WRITE FOR FREE CATALOGUE, POSTPAID.

GEBRÜDER BORNTRAEGER,
PUBLISHERS,
Schönebergerstr. 17a. BERLIN, S. W. 46.

WANTED
Back volumes of the
American Journal of Pharmacy
For 1843, 1846, 1847 and 1865.
Address,
American Journal of Pharmacy
145 N. Tenth Street Philadelphia

To Repair Broken Articles use
Major's Cement
Remember
MAJOR'S RUBBER CEMENT,
MAJOR'S LEATHER CEMENT.

Among the latest arrivals of

RECENT REMEDIAL AGENTS

advertised by us to the medical profession, are

GLANDULEN TABLETS

used for the treatment of Tuberculosis.

YOHIMBIN (Alkaloid)

a new aphrodisiac in ½ and 1 gramme bottles; also in tubes containing ten tablets.

HOMMEL'S HAEMATOGEN

a blood food, is gaining in popularity,

as also

MERCOLINT CHEST PADS

a new and economical method of treating syphilitic patients.

LITERATURE SUPPLIED BY

LEHN & FINK

SOLE AGENTS NEW YORK

WYETH'S

PREPARED FOOD

FOR

Infants and Invalids

PREPARED FROM

MALT, MILK AND CEREALS

NEW SCIENTIFIC RELIABLE

A food formed to meet the conditions which these two phases of life present must be chemically and physiologically adapted; the nutritive elements must be fixed and concentrated; the assimilable properties must be so adjusted that there must be a quick absorption and appropriation, and there must be no excess of substance to tax the power of digestion.

The superior of mother's milk; a combination affording the physician every advantage and embodying the established principles of infant feeding and hygiene.

Its diastasic properties prevent curdling, correct the ills of malnutrition and tone the weak and wasted organs of digestion.

Wyeth's Prepared Food is not a predigested Food, but one that will digest itself under all conditions—the Malt, rich in diastase, acting in conjunction with the pancreatic secretions, digests the fats and albumenoids of the milk, converting the starch of the cereals into sugar (Maltose) and neutralizing the tendency of the acids of the stomach to form curds—thus rendering the Food of infinite value to the infant and invalid alike, supplying the necessary nutrition and material to strengthen and build up the human economy.

Its digestive properties may be shown by simple test, the progress of conversion being readily noticeable.

PUT UP IN GLASS CONTAINERS AS FOLLOWS:

In 8-oz. bottles, 35c. size, $2.80 per doz. In 16-oz. bottles, 65c. size, $5.20 per doz. Hospital size, 6 lbs., $2.00 per bottle

JOHN WYETH & BROTHER

INCORPORATED

PHILADELPHIA, PENNA., U. S. A.

Write for copy of "Prices Current" for 1900

Every Drug Ground by Us Botanically Correct

Those that depend upon alkaloids for their medicinal value are assayed and required to come up to

STANDARD STRENGTH

Every article not perfect in all respects is rejected.

The pharmacist is assured, when using our Powdered Drugs for percolation, that his preparations will be of proper strength and free from admixtures of false or foreign matter.

Send for Price List and Formulary.

GILPIN, LANGDON & CO.

BALTIMORE, MD.

PANOPEPTON

PANOPEPTON

Contains the entire food substances of beef and wheat;—contains these constituents in the soluble, perfectly diffusible form into which they are converted by the natural animal enzymes in the process of normal digestion.

Manufactured by

FAIRCHILD BROS. & FOSTER

NEW YORK